

GIFT
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THE Pacific Pharmacist

An Independent Journal Devoted to Progressive Pharmacy

Vol. 13

AUGUST, 1919

No. 4

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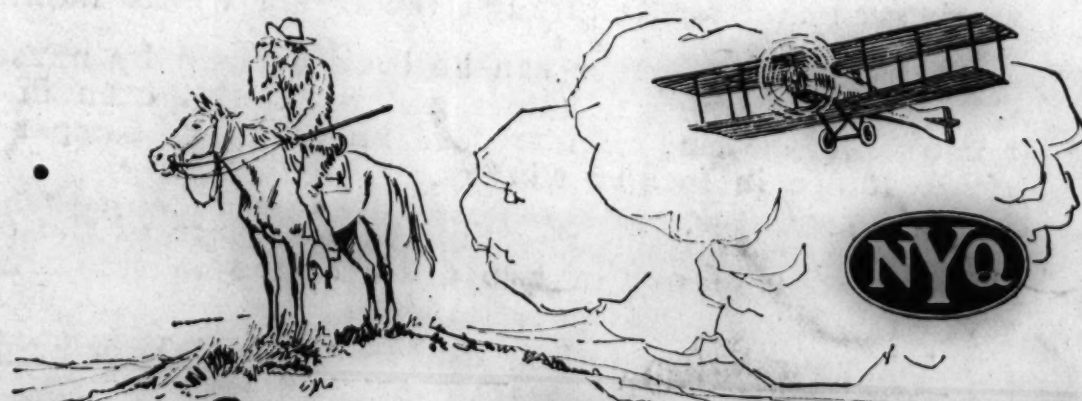
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No. 208



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Theoretically, a Mixed Vaccine which protects against Influenza and (even temporarily) against Pneumonia and the other complications following Influenza, is better than one which protects only against Influenza. Practically, this seems to have been proved by the experience of many physicians in widely separated areas, and our faith in Mixed Vaccine Respiratory Infections,—“M. V. R. I.”—as a prophylactic has been more than justified by the splendid protective results following its use.

Just how permanent is this immunity has yet to be established, but if it is for no longer than two or three months it is still a remarkable stride in preventive therapy.

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WHEN THE BOYS COME HOME**A PLACE MUST BE READY FOR EVERY RETURNING
SOLDIER AND SAILOR PHARMACIST.**

About ten thousand Soldier and Sailor Pharmacists will return to civil life. They have given up business or good position to answer the call of their country.

What are the "stay at homes" going to do for them? A period of reconstruction confronts American Pharmacy as it does every other endeavor. The reconstructive period will be quite as serious for those who are at home as it will for those who soon will commence to return. Every American Druggist is face to face with the highest duty to returning pharmacists, to himself and to American Pharmacy.

The American Pharmaceutical Association has appointed a Committee to handle the difficult problems about to arise along common sense and broad lines; so that true help may be rendered and conditions may not become chaotic. The Committee has an appreciation of its enormous task. It means to be helpful in many directions. Aside from finding places for every returning Pharmacist, it plans to secure for them registration and educational facilities of very great benefit.

**WE NEED THE HELP OF EVERY DRUGGIST LOYAL TO COUNTRY
AND PHARMACY.****THE ADVISORY COMMITTEE OF THE AMERICAN PHARMACEUTICAL
ASSOCIATION FOR SOLDIER AND SAILOR PHARMACISTS.**

C. O. BIGELOW, CHAS. E. CASPARI,
H. C. CHRISTENSEN, EDWARD SPEASE.
FRANK H. FREERICKS, Chairman.

Every American Pharmacist is urgently requested to immediately fill out and detach the following Questionnaire and mail it to Frank H. Freericks, Chairman, Mercantile Library Bldg., Cincinnati, Ohio:

STATE..... CITY..... STREET.....

1st: Give name and last-known address of employee, if any, now in the service.

.....

2nd. Was he a registered Pharmacist or registered Assistant?

3rd: Is he a graduate in Pharmacy?

Was he attending College?

4th: Is his position with you open for him on his return?

5th: If you are the successor of one who is now in the service give his name and last known address.

6th: If a neighboring druggist has sold out and closed store to go into the service, give his name and last known address.....

7th: Will you have a position for a returning pharmacist when the time comes?

If so, at about what salary?

8th: Do you believe it possible that you would have employment for a partly disabled Soldier or Sailor Pharmacist

9th: Would you consider selling your store to a returning Pharmacist? If so, what do you ask for it?

How much cash required? What is business annually?

10th: Would you entertain a partnership offer from a returning Pharmacist? If so, how much money required?

What is annual volume of your business?

(Signed)

The Committee will be under great expense to carry on its work. It will gladly accept contributions. If so disposed, make your check to H. M. Whelpley, Treasurer, and enclose with Questionnaire.

All information of a confidential nature will not be published and will be used in individual cases only.



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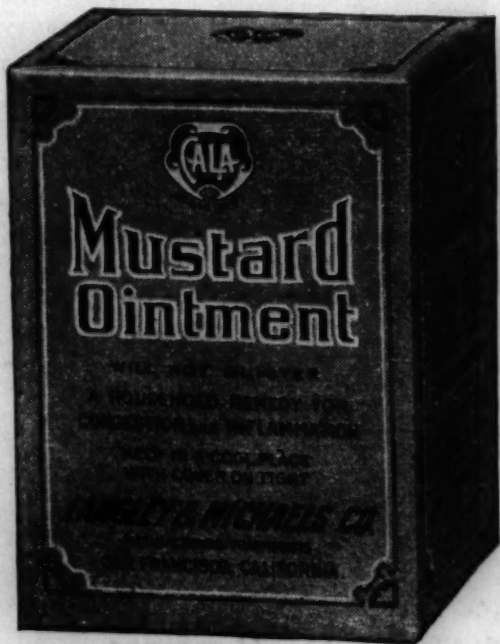
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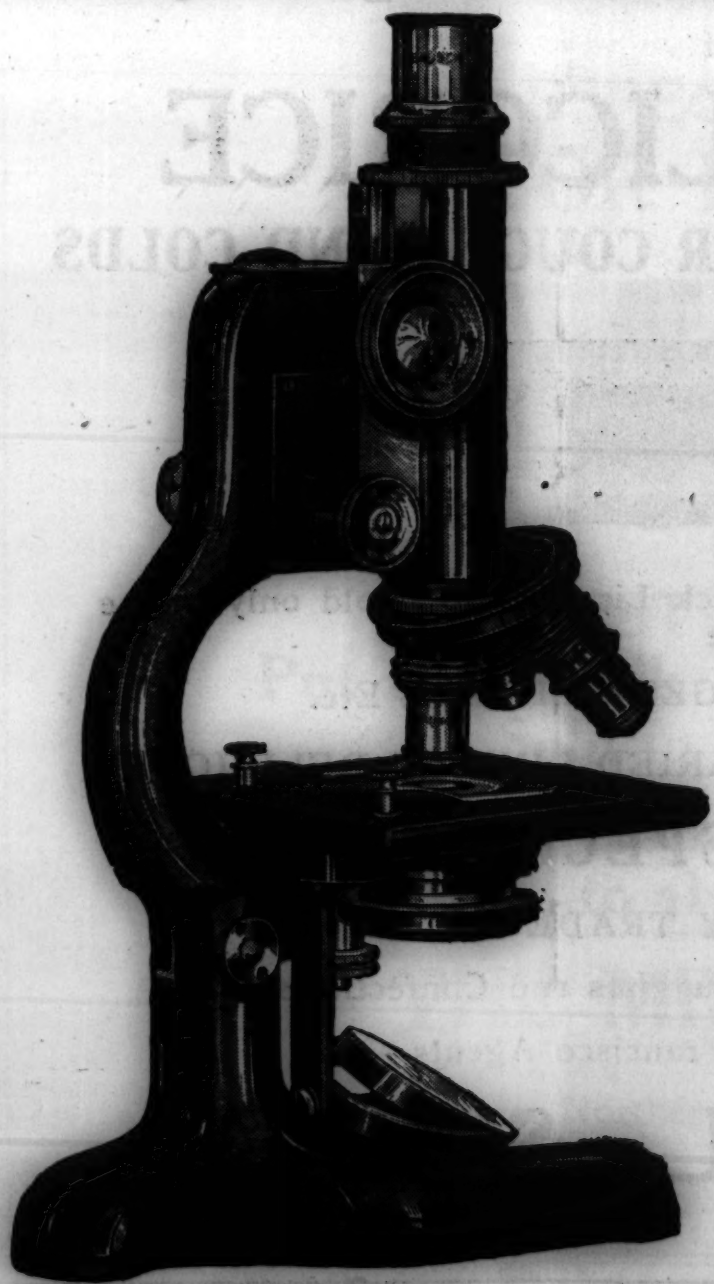
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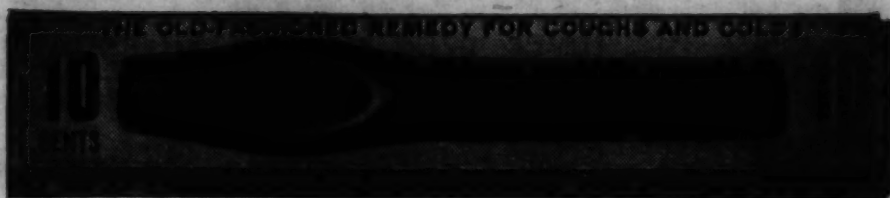
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The small boy walked into the office of the village doctor and, marching up to him, whispered very confidentially:

"Please, sir, mother sent me to say our Lizzie's got influenza awful bad, and she wants to know how much you'll give her to spread it all over the village?"—Pearson's Weekly.

The lady was complaining to her dairyman some time ago regarding the quality of the milk.

"Short o' grass feed, mum; short o' grass feed this time o' year," said the jocular milkman. "Bless you, them cows of mine are just about as sorry as I am. I often stands and watches 'em cryin', reg'lar cryin', mum, because they feel as how their milk don't do 'em credit. You don't believe it?"

"Oh, yes, I believe it," said the lady; "but I wish in the future you'd see that they don't drop their tears into our can."

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"Yes," said the jovial, red-faced man in the group of traveling men about the hotel fireplace. "I was successful as a salesman from the first day I started. In the first place, I went into a big manufacturing concern, I got a big order inside of five minutes."

"What was it?" asked one of the group, with interest.

"Get out and stay out," said the red-faced one, as he slipped through the swinging door nearby.

Forewarned

Wife—Well, dear, I shall have to do the cooking now. Cook left without warning this afternoon.

Husband—Not exactly without warning. She told me this morning I had better bring home some dyspepsia tablets tonight, but I didn't understand what she meant.—London Tit-Bits.

It was during the daily lesson on

patriotism and teacher had finished telling the children of the duty to one's country and the blessings of citizenship.

"And now, children," she said, "what is it that binds us together and makes us better than we are by nature?"

Little Evelyn raised her hand.

"Well, Evelyn, can you tell?" asked teacher.

"Yes, ma'am. Corsets," said Evelyn.
—Detroit Free Press.

"Gentlemen of the jury," said the judge as he concluded his charge, "if the evidence shows in your minds that pneumonia, even indirectly, was the cause of the man's death, the prisoner cannot be convicted."

An hour later a messenger came from the jury room.

"The gentlemen of the jury, Your Honor," he said, "desire information."

"On what point of evidence?"

"None, Your Honor; they want to know how to spell pneumonia!"—Chicago Herald.

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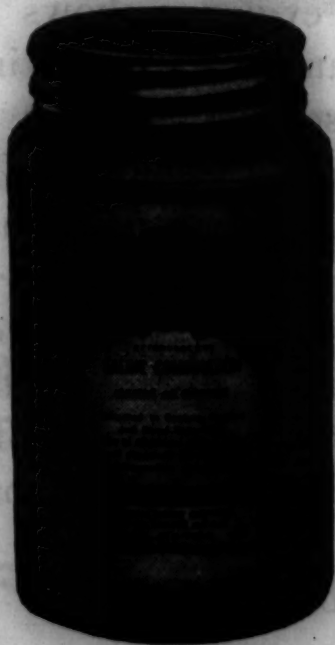
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Members of the retail drug trade are warned against buying or selling colorable imitations of the well-known yellow-wrapped package of Fellows' Syrup. The highest Courts have decided that such an act is an infringement of the Trade-Mark Law, and makes the offender liable to a suit for damages.

THE Pacific Pharmacist

An Independent Journal Devoted to Progressive Pharmacy

Vol. XIII.

AUGUST, 1919.

No. 4.

Published on the Fifteenth Day of the Current Month on behalf
of the Pharmacists and in the interests of the Drug Clerks.

H. B. CAREY, Manager

Editorial Staff:

J. H. DAWSON

H. B. CAREY

F. W. DESSEL

Address all communications and make all checks and money orders payable to The
Pacific Pharmacist, 1294 Ninth Ave., San Francisco, California.

Communications on questions pertaining to Pharmacy and the Drug Business are
solicited. The name of the writer should accompany every article, not necessarily for
publication, but as a guarantee of good faith.

EDITORIAL

ALCOHOL AND PHARMACY.

Pharmacy perhaps more than most legitimate fields is likely to be seriously handicapped by unnecessary and hasty prohibition legislation. Unfortunately alcohol is one of the essential chemical substances necessary in the pharmaceutical industries. It is one of the most efficient solvents for a large number of the active constituents of crude drugs; in fact it is so efficient and necessary in much of the chemical industry that we could not do without it. To enact legislation which will seriously handicap legitimate pharmaceutical and chemical industries is, indeed, foolish and unwise. Alcohol is absolutely essential as a preservative of many plant constituents and pharmaceutical remedies. That extreme legislation will eventually cripple legitimate industry is unlikely. The pharmacists, however, together with the medical profession, will be held responsible for a large measure of wrong doing which will be brought about by the illegal dispensing and sale of alcoholic liquids. It behooves, therefore, every decent pharmacist and physician to take every step possible in preventing such conduct as will eventually result in unreasonable and drastic legislation. If the public will receive only the amount of alcoholic liquid

which may be used legitimately and properly, there will in the future be little criticism concerning the profession. On the other hand, if the crooked physicians and pharmacists continue to dodge the intent and spirit of the law, naught but great injury can come to Pharmacy; for certain it is that the great majority of thinking Americans have little sympathy with public booze joints, and illegitimate use of liquor.

THE PACIFIC PHARMACIST has every confidence that the pharmaceutical profession will be found square and above board in regard to the law governing sale of alcoholic liquid. That a few black sheep will continue to injure our professional standing, is a certainty. Let the organized profession bring every pressure to bear and assist the machinery of the law to weed out both physicians and pharmacists who evade the law and disgrace the medical and pharmaceutical professions. Every reputable pharmacist knows that he is already profiting because of the closing of saloons and retail liquor shops. He, indeed, would be an ungrateful citizen who would stoop to illegal methods, which will only further help to restrict legitimate Pharmacy and Medicine. Don't hesitate to point out the crooks who would disgrace us. See that they pay the full penalty for jeopardizing the welfare of our profession.

SMALLPOX IN CALIFORNIA.

The California State Board of Health has recently sent out a warning to physicians and local health boards that smallpox is prevailing very widely in California and in many places it is mistaken for chickenpox. This makes the menace all the more serious as the laity does not recognize chickenpox as of any serious importance.

Vaccination should be more extensively used than it is at present. It is the only means we have at hand for the prevention of this vile disease. The statistics in regard to the value of vaccination are so preponderously in favor of it that only a rabid, Christian Scientist or ignoramus could refuse to believe in its worth. Christian Science probably is one of the factors which causes the neglect of proper protection of school children. It is, however, not the only cause as many people from purely fanciful reasons or utter ignorance refuse to acknowledge its value. Sooner or later we may have a serious epidemic wherein the mortality alone will be sufficient argument to favor vaccination. It is not uncommon in comparatively mild epidemics to have a mortality of 12%. In severe epidemics mortality has ranged from 25 to 40%. If our non-believers ever get a taste of the real thing they may change their attitude in regard to this most important public health measure. Proper vaccination will positively prevent smallpox. Are you and your family protected?

PREREQUISITE IN VIRGINIA.

According to a law approved March 5, 1918, Virginia will require, beginning with April 1922, an applicant for examination as a registered pharmacist by the State Board of Pharmacy shall present to the Board satisfactory evidence that he or she is at least twenty-

one years of age, and that he or she is a graduate of a school of pharmacy approved by the State Board of Pharmacy.

We seriously hope that a similar regulation will soon be applied in California. If an analysis of the records of applicants for licensure in California could be made it would disclose some shocking conditions of laxity in educational requirements. Our quiz schools and other lax regulations furnish a large class of undesirable and unnecessary druggists.

VENEREAL REMEDIES IN OREGON.

The State of Oregon strictly prohibits the sale of venereal remedies and the penalty for violation of the code is a fine not exceeding \$1000 or imprisonment not exceeding a year or both. The following sections of the code will explain fully:

SECTION 61—It shall be unlawful for any person, or persons, firm, corporation or association except boards of health or agencies approved by the State Board of Health, to publish, deliver or distribute, or cause to be published, delivered or distributed in any manner whatever, or to permit placards or posters to remain on buildings or out-houses or premises controlled by him containing an advertisement concerning venereal disease, lost manhood, lost vitality, impotency, sexual weakness, seminal emissions, varicocoele, self-abuse or excessive sexual indulgence, and calling attention to a medicine, article or preparation that may be used therefore, or to a person or persons from whom, or an office or place of business at which information, treatment or advice may be obtained.

SECTION 62—It shall be unlawful for any druggist or other person to sell any drug, compound or specific preparation of any kind used for or reasonably intended to be used for, the cure or treatment of any venereal disease, except upon the prescription of a regularly licensed physician.

METRIC SYSTEM DESIRABLE.

THE PACIFIC PHARMACIST has previously called attention to the desirability of making the metric system better known in this country in order to increase our prestige and business advantages in most of the foreign countries. Strange as it may seem, America and England are the only countries where the metric system is not universally used. Why it should be so is difficult to explain. That it is so works to the disadvantage of both countries in a business way. Foreigners think and work in grams and meters. To barter with them in other standards of measure puts our salesmen at a great disadvantage. That the metric system has many distinct advantages everyone will admit. Why not insist that the metric system be taught thoroughly in the public schools, and then put it into operation in domestic business?

THE CHEMICAL FOUNDATION, INC.

Elsewhere in to-day's issue you will be interested to note that the Chemical Foundation, Inc., has begun suit to prevent the importation of Salvarsan and Neo-Salvarsan on the ground that such importation constitutes an infringement of patents held by the Chemical Foundation.

We shall await the outcome of this suit with much interest, in view of the fact that this corporation owns more than 4,500 German patents for drugs, dyes and chemicals. If this suit should be successful, it would appear that the importation of German chemicals and allied materials would be entirely prevented. Whether this would be for better or worse is one of the open questions.

Save!

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Buy W. S. S.

PRISON FOR DRUG TRAFFICKERS.

According to Southwest Medicine, four physicians of El Paso were convicted for illegal traffic in narcotic drugs, and received penitentiary sentences from Hon. W. R. Smith, Federal Judge. It seems these four physicians made a regular practice of catering to drug addicts. The surprising part of it is that some of the pharmacists of El Paso were not taken in the net. For years El Paso has been the Mecca of drug fiends because of its close proximity to Mexico. It is said the Internal Revenue Inspector gathered 10,000 prescriptions in three drug stores. It appears that many of the addicts received from 5 to 15 grains daily of morphine sulphate.

To the great credit of El Paso the entire clean-up was effected in a few weeks and the physicians put behind prison bars. If the prison sentence was used more liberally, the drug traffic curs would soon disappear.

CALIFORNIA COLLEGE OF PHARMACY, UNIVERSITY OF CALIFORNIA, ANNOUNCEMENT.

The forty-eighth annual session of the California College of Pharmacy will begin August 24-26-29. Applicants may register on or before these dates at the College Building in San Francisco.

There are but few remaining years where prospective students can matriculate on two years of completed high school work; high school graduation being the 1922-23 requirement. Applicants are to bring certificates, record or diplomas in evidence of their completed high school work.

The assignment of seats and laboratory lockers will be on September 2nd.

The Faculty will present a symposium on an official drug on Wednesday, September 3rd.

FRANK T. GREEN, Dean.

"THE MEDICINE AND PHARMACY OF ANCIENT INDIA."

By SAILENDRA NATH GUPTA, Phar. B.

Influence of Hindu Medicine in other Countries—It was remarked long ago that there exists a striking similarity between the medical doctrines of the Hindus and of the Greeks. A certain school of which Hass was, perhaps the extreme representative, went so far as to declare that the medicine of India was derived from the Greek, and denied the existence of Charaka, Susruta, etc. Every school-boy knows that India was in commercial intercourse with the Greeks and the Persians long before the Christian era. We read, for example, that in the 5th century B. C., Darius, the king of Persia, sent navigator Skylax to explore land lying between the Indus and the Arabian Seas. Also in 416 B. C., Ktesias, the Greek body physician to Ataxerxes, wrote a work on India, in which he made particular mention of an ointment produced there, which he praised on account of its excellent perfumes. Hippocrates is said to have visited India in the course of his travels about 400 B. C., and in his works he speaks of a number of "Indian" drugs. Alexander the Great sent an embassy to India to study the doctrines and practices of the Gymnosophists. He ordered his admiral Nearchos, to explore the western coast of the country, as Arrian tells us in his story. That there was given and taken among the Greek and Hindu cultivators of medicine, there can be no doubt, but modern research has upset the theory of Haas and scholars are now agreed that Hindu medicine followed its own course assimilating here and there and now and then, but that it always possessed an individuality characteristically its own.

The advent of Buddhism was of great importance in disseminating the classical Hindu medicine. The monks who were bred in that faith, passed to all parts of Asia and the Indian Archipelago. They studied medicine, not to profit by it, but to help the weak and

ailing. They established houses akin to hospitals or dispensaries to which the sick might report for treatment. Not only this, they also carried with them the books of the great writers, Charaka, Susruta, Bagbhatta, Harita, Jangabalka, and Parasor Sanhetas and others, and translated them into foreign tongues.

The first course of Buddhist medicine which, it may be remarked was in all essentials that of physicians of the Brahmanic period, appears to have been Ceylon. But Buddhist influence was even stronger in the North, where it was adopted by the people of Tibet, and from there spread to races inhabiting the southern part of what is now Siberia, to the Indian Archipelago and even to China.

It would be interesting to draw a parallel between the labors of those Buddhist workers to those of their later Christian brethren of the early Middle Ages, but that is a topic which I reserved for a future article in our series of lectures in the history of Pharmacy—but only one thing I must mention here, what we require to build up this humanitarian work a perfect and up-to-date science which our fore-fathers left in the vista of their civilization. It is to be regretted that since the beginning of the 9th century, just after the disappearance of Chakradatta—this science was practically untouched or rather no improvement has been made for the development into a perfect science, although the Hindu Sages left vast resources and wonderful discourses in comparison with the contemporary nations at that time in other parts of the globe. Because our forefathers have left a vast knowledge behind them and that we should not progress, but only ruminate them is not the idea—we must add more and more till we can have it a perfect science according to the idea of the present civilization. The thing is this—that these empirical formulas should be developed into structural, and graphic with its isomers.

The study of medicine and pharmacy essentially needs the help of its dependable subjects as mathematics, phy-

sics, chemistry—1st ground plan; then, anatomy, histology, pathology, surgery, obstetrics; then, mental diseases and bacteriology, and its allied subjects, such as hygiene, etc.

To develop pharmacy, we must find out facts and figures where we are wanting, and add new methods which the world presented to our own stock till it can assimilate in her own language and produce new things.

Ayur-vedic Period—From the pre-Buddhistic Era to circa 800 A. D.—The constitution of matter, the atomic theory:—Kanada, the founder of the Vaiseshika system, chiefly occupied himself with the study of the properties of the matter. The atomic theory as propounded by him has many points in common with that of the Greek philosopher Democritus. His theory of the propagation of sound cannot fail to excite our wonder and admiration even at this distant date. No less remarkable is his statement that *light and heat are only different forms of that same essential substance*.

Tanmatras or Particles—Five subtiles, rudiments or atoms, denominated Tanmatras perceptible being of a superior order, but unapprehended by the grosser senses of mankind; derived from the conscious principle, and themselves, productive of the five grosser elements, earth, water, fire, air, and space.

Five elements—Produced from the five elementary particles or rudiments. 1st, a diffused, ethereal fluid (Akasa), occupying space, it has the property of audibleness, being the vehicle of sound, derived from the sonorous rudiment or ethereal atoms; 2nd, air, which is endowed with properties of audibleness and tangibility, being sensible to hear and touch, derived from the tangible rudiment of aerial atom; 3rd, fire, which is invested with properties of audibleness, tangibility and color, sensible to hearing, touch and sight, derived from the coloring rudiment or igneous atom; 4th, water which possesses the properties of audibleness, tangibility, color and savor, being sen-

sible to hearing, touch, sight and taste, derived from the savory rudiment or aqueous atom; 5th, earth, which unites the properties of audibleness, tangibility, color, savor and odor, being sensible to hearing, touch, sight, taste, smell, derived from the odorous rudiment or terrene atom.

- A. The perception of animated atom.
- B. Grosser body.
- C. Conception of the simple binary, tertiary and quaternary atoms.
- D. Quality of the substance viz. color, savor, etc.
- E. Conception of gravitation.
- F. Conception of levity.
- G. Conception of fluidity.
- H. Conception of viscosity.
- I. Conception of sound—which is peculiar quality of ethereal element and is to be apprehended by the hearing. It abides in that element exclusively and is its characteristic quality. Two sorts are distinguished, articulate and musical.
- J. Theory of the propagation of sound.
- K. Conception of atoms.

Chemistry in Charaka and the Susruta.

- a. The tastes—the metals and their calces.
- b. Discourse in the tastes—their relationship to five prime elements—the nature of the alkali.
- c. Five kinds of salts.
- d. Mineral for external application as sulphate of copper, sulphate of iron, realgar, orpiment and sulphur in combination with vegetable drugs are prescribed for external application, in ringworm, eczema, leprosy, etc.
- e. The eight varieties of urine.
- f. Preparation of Kshara or alkali.
- g. Pill Iron Compound.
- h. A collyrium (Conch-shell, Coral, lapis lazuli, iron, copper, the bone of the frog, sulphide of antimony and the seed, Hyperanthera & Morungo).
- i. Powder of pearl compound.
- j. Iron, gold and silver tonics.

Rasayana defined—Medicines are of

two kinds, the one promotes the strength and vitality of the healthy, the other cures diseases.

Whatever promotes longevity, retentive memory, health, virility, etc., is called *Rasayana*.

Susruta—

- I. Preparation and use of alkalies and alkaline caustics.
- II. Rendering the alkali caustic.
- III. How to store up the alkali.
- IV. Characteristics of the good and the bad alkali.
- V. Why acid neutralizes the alkali.
- VI. Mild and caustic alkali.
- VII. Description of the blood.
- VIII. Advices—on the collection of drugs.
- IX. Salts—Rock salt, sea salt, bit Sauvarcha, romaka and audbhid.
- X. Carbonate of potash borax. Internal administration of alkali is recommended for dissolving the stones or gravels (urinary calculi).
- XI. Internal use of lead and zinc.
- XII. Use of alum-earth, red-ochre, sulphate of copper, basic sulphate of iron.
- XIII. Roasting of ores and other metals, so as to render them fit for internal administration.
- XIV. The origin of bitumen.
- XV. Iron pyrites.
- XVI. Gold dust.

The Poisons are classified as animal, vegetable and mineral, respectively.

Use of Mercury—Note on the metals and their salts—namely, tin, iron, lead, copper, silver, gold. Formula for hair dye—Sulphate of copper and iron, boiled with oil of lelleric Myrobalans are used as a remedy for turning gray hair into black.

Formula for Eye-Ointment—Transitional Period. From 800 A. D. to 1100 A. D.

Chemistry in the Siddha Yoga of Vrinda and in Chakrapa. (1) Preparations in which sulphide of copper and Aethiops Mineral figure.

The Tantric Period—From 1000 A. D. circa 1300 A. D.—Introduction of

several kinds of chemical apparatus as Dola Yantram.

Apparatus for killing metals.

Gharbha Yantram. Hamsapaka Yantram. Crucibles of various shapes.

Unknown samples are traced by the color of the flames, as copper—yields a blue flame, that of tin is pigeon-colored, that of lead is pale tinted, that of iron is tawny, etc., etc.

Test of a Pure Metal—A pure metal is that which, when melted in a crucible, does not give off sparks nor bubbles, nor spurts, nor emits any sound, nor shows any lines on the surface, but is tranquil like a gem.

Koshti—Apparatus for extracting the essence of metals which is 16 digits in width and 2 cubits in length.

Extraction of Copper—From Pyrites. Metals were used internally or externally after killing or rectifying their poisonous effects.

"There is no such elephant of a metal which can not be killed by the lion of a sulphur."

Kasisha (green vitriol) *Rock salt*, the pyrites, *Sauvira* (*Stibnite*), the aggregate of three spices, sulphur, salt-petre, the juice expressed from malati, all these moistened with the juice of the root of Moringapter makes a Vida, which would kill all (the metals).

Sulphur, orpiment, sea-salt, salt, sal-ammoniac, borax, these digested with the ashes and urines, give rise to another kind of Vida.

Purification of Quicksilver—Quicksilver rubbed with the juice of the aforesaid plants and distilled seven times, becomes pure.

Quicksilver made into a paste by being rubbed with copper and subjected to distillation, leaves behind tin and lead (which are often adulterated), becomes pure.

Killing of Mercury—Green vitriol, alum, salt, borax, mixed with the aforesaid vegetable drugs, kills mercury in an instant (in the shape of calomel).

Killing of Gold—Salt-petre, green vitriol, sea-salt, rock-salt, mustard, borax, sal-ammoniac, camphor, the py-

rites, all these are to be taken in equal parts. The crucible is to be smeared with the milky juices of the *Euphorbia neriifolia* and *asclepias gigantea*, then having added the powder of the aforesaid, *Vida*, the gold is to be killed.

Tests for killed Mercury—When the mercury assumes divers colors after having given up its fluidity, it is known as swooned. Killed mercury is that which does not show signs of fluidity, mobility and luster.

Coloring of Metals in different ways—Mica of three kinds, namely, pinakam, nagamandukam, and vajram, which is of different colors, red, yellow, and black.

There are references of various kinds of metals, *Vaikranta*, copper pyrites, *vimala*, *silagatu*, *sasyaka*, *chapala*, *Rasaka*, extraction of copper, zinc.

Inferior Metals—Sulphur, *Gairika* (red iron), *Tuvari* (alum), *Talaka* (orpiment), *Manassila* (Realgar).

The gems are also regarded as the agencies which help the fixation or coagulation of mercury.

Vajram (diamond) is of three kinds. male, female, and hermaphrodite.

Instruction for Laboratory—The Laboratory is to be erected in a region which abounds in medicinal herbs and wells. It is to be furnished with various apparatus. The phalles of mercury is to be placed in the east, furnaces to be arranged in the south-east, instruments in the south-west, washing operations in the west, drying in the north-west, etc.

Killed iron (or a general killed metal) is that which on being heated with silver does not mix (or alloy) with it.

Uses of Oil—Essential and Volatile—a list of plants is given from the seeds of which oil is expressed.

Uses of Fats—The fats of Jackel, the frog, the tortoise, the crab, the dolphin, the ox, the pig, man and also of the goat, the camel, the ass, the sheep, and the buffalo are to be used.

Urines—The urine of the elephant,

the urine of the she-buffalo, the ass, the horse, and the cow.

Acids—*Rumex Vesicarius*, the citrous fruits and lemons, *oxalis*, *conviculata*, tamarind, the acid exudation of the cicer arietinum, *Zizphus jujuba*, pomegranate, *averrhoa*, *carambala*, these are the acids which will suit for the purification, dissolution and killing of mercury and minerals.

Earths—Brick, red ochre, saline deposits, ashes, earth from anthills, etc.

Poisons—*Kalkuta* (cobra) aconite ferox, *sringika*, and the teeth of the animals are the chief poisons. There are many minor poisons.

Solvents—Treacle, *abrus prelatorious*, clarified butter, honey, borax, etc.

Mercury and its Compounds—

- (1) Purification of Mercury.
- (2) Fixation of Mercury.
- (3) Incineration of Mercury.

Notes on the Minerals—

Diamond—The Hindus have proved the combustibility of diamonds long ago, which European chemists proved after three centuries of experiment.

There are different descriptions of various minerals with their shapes and crystallized shapes.

Alum is manufactured from the water of a hot spring.

The impure salt-petre which is employed to supply the second base in the above mentioned manner, is obtained by lixiviation of village refuse.

On Metals and Metallurgy—In the vedic age—gold and silver were not only known but were used in ornaments of various descriptions. In the vedic age iron was designated *Krishnayas* or black metal, and copper—the red metal. Besides gold and silver, several other metals, e. g. iron, lead, and tin are mentioned in *Yajur Veda*.

Unfortunately very little material is now available to enable us to present a connected narrative of the metallurgical skill of the ancient Hindus. Many important links are missing.

Magasthenes said that the Indians were well skilled in the arts.

Indians were noted for their skill in the tempering of steel. The blades of Damascus were held in high esteem but it was from India that the Persians, and through them the Arabs, learned the secret operation.

The wrought-iron pillar close to Kutub near Delhi which weighs ten tons is some 1500 years old, the huge iron girders at Puri, the ornamental gates of Somnath and the 24 foot wrought iron gun at Nurvar are monuments of a bygone art and bear silent but eloquent testimony to the marvellous metallurgical skill attained by the Hindus.

The Extraction of Zinc from Ores—Which is so verbatim described that the modern metallurgists are surprised by the attainment of the Hindus' skill at so early a part of civilization.

On the Essence of Minerals—Calamine, the vitriols, blue vitriol. Are all tested and used by the Hindus.

The ancient Hindus are sometimes credited with the knowledge of the art of manufacturing gun powder, in support of which several recipes given in the Sukranite or Elements of Polity of Sukracharya.

Mineral Acids—Sir W. O'Shaughnessy (Manual of Chemistry), Anislie and others maintained that Hindus were acquainted with the methods of preparing the mineral acids.

The Crude Conception of Colloidal Chemistry by the Hindus—Solution dealing with a subdivision of a solid substance which is so fine that it is impossible to separate the solid from the liquid by the ordinary methods of mechanical separation (decantation, filtration), such solutions are the basis of the colloidal chemistry. The use of iron and gold in solution by the ancient Hindus based in the nature of modern colloidal chemistry.

Iron after Killing—That is, repeated roasting with cow's urine, finely powdered and sieved, held in suspension under a sac of frog's skin for several weeks—(dialysis) then used as medicine—for liver, dropsy, anemia, etc.

Gold held in suspension of acidulated alcoholic ferments for several months—when filtered may be used in several diseases as a remedy. In contradistinction to true solutions which are homogeneous liquids and the ultra-microscopically small solid particles. This lack of homogeneity becomes evident on considering the optical properties of a colloidal solution. True solutions, such as those of sodium chloride, are optically empty, i. e., a beam of light passing through remains invisible in the interior of the liquid, in the interior of a colloidal liquid the path of the beam can not be followed perfectly distinctly as if it were in a dusty atmosphere. The most widely accepted theory of the classical physical chemists is that of M. Bose, which holds that swarms of molecules swim about in the crystalline liquid. But this concept of a "Swarm of molecules" is evidently nothing more than the designation of sub-molecular or colloid aggregates and even though this word "Colloid" has entered into the discussion only recently, more and more evidence is accumulating to indicate that, at least in many instances, the crystalline liquids are typical emulsion colloids.

In conclusion—I may mention that the mechanical, physical and chemical theories of the Ancient Hindus is intended to be a synoptic view of the entire field of Hindo-physico-chemical science. So far as this reached the stage of positive science as distinguished from the prior mythological and empirical stage. I have described the Hindu account of the constitution of the fats and oils and the inorganic tissues, in addition to the Hindu inorganic chemistry. The chief chemical industries of the Hindus which secured them an early pre-eminence in manufactures for thousands of years with their interesting recipes relating to several methods of chemical technology of mechanico-physical theories I have mentioned the Hindu conception of energy, potential as well as kinetic, and of molecular motion, so far as they are applied to the elucidation

tion of problems of a physico-chemical nature, viz., the constitution of matter, the genesis of atoms, and their infra-atomic constituents, and the chain of mechanical causation in the system of Nature. I have also pointed out the Hindu theories of light, heat and sound, as implying current or wave motion. Hindu conception of colloidal chemistry though empirical, yet it established the fact that the conception of the modern theory of colloids, which is still an imperfect theory of the modern scientist, was conceived by the Hindus of ancient time. The only regrettable thing is that the Hindus did not develop their achievement into possible perfection in spite of foreign rulers, who certainly produced a dark age upon Hindu civilization. I still hope that the Hindu nation with its glorious past and vast latent potentialities may yet look forward to a still more glorious future.

PHARMACY AND HUMAN WELFARE.

By HENRY KRAEMER, Dean of University of Michigan, College of Pharmacy.

I am very happy to be with you tonight to congratulate you on this auspicious occasion and to felicitate you on the completion of your Course in Pharmacy.

I believe in the purposes of the Detroit Institute of Technology for two reasons: First, the history of the origin of the institute shows that it originated in the formation of a young men's club in the Detroit Young Men's Christian Association. This may not mean much to you for the moment, as you doubtless have been too busy with the seriousness of completing your studies and earning your livelihood to reflect upon how the opportunities which you have

enjoyed, were developed. But as you go on in life, I hope that you will keep before you the altruistic spirit which dominates your Alma Mater, and that as you are successful, you will give something of your time and a part of your earnings to the support of those social and civic projects which will furnish opportunities for the improvement and the betterment of your fellows.

Second, I am glad to be here because of my personal knowledge of the aims and ambitions of your Dean and the Faculty to make the Institute of great service to Pharmacy, and to help each one of you to secure a firm grip on the ladder of success. I hardly need to remind you that the success of a college depends upon the achievements of its alumni. President Pritchett of the Carnegie Foundation has well said that "A college rises or falls, advances or retrogrades, depending upon the efficiency of its alumni and upon the interest that they individually and collectively take in its work." Each college needs the patriotic support of its alumni.

This is your Commencement Day and we, who have gone on ahead, know that it is but the beginning and not the end of your education. Your life at college has been the preparation for a career. Your ideas have crystallized themselves into ideals. Your thoughts have been battered and smashed and you are better able to distinguish facts and truths from fallacies and shame. From your own experiences and the contact with your fellows you have now mapped out a chart for your conduct of life, and I believe that you are in a mood on an occasion like this to see your profession in a larger way and learn the part which you may perform to the credit of yourself and humanity. My subject tonight is "Pharmacy and Human Welfare", and you will grasp its meaning in proportion as you understand what seems to me to be the greatest aim of the individual.

You will recall that in the development of the world there was the Glacial or inactive period, and so in the development of man there have been long periods in which human efforts were congealed and no new inspirations came into being, as the sixteen centuries following Dioscorides. You are living in a world which is active, full of life and growth and everything including our ideals, our relationship to our fellows, our institutions and even our governments are changing. The greatest curse to any man is to stop at the miasmatic swamps where there is stagnation of thought and no ideals or visions to cause one to press forward. I am sure that none of you will feel on this night like the nerveless Hamlet who moaned: "The time is out of joint; oh cursed spite, that ever I was born to set it right!" Every youth with red blood in his arteries responds to the militant spirit of Rupert Brooke, who cried out as he sailed for Gallipoli: "Now God be thanked who hath matched us with this hour!"

You must develop a course of action and a conduct of life which will sustain and never fail you, no matter in what position you may be placed. Success carries as many obligations as failure. Indeed, these are merely relative terms; probably very few men are thoroughly satisfied with what they have done compared to what they might have done. In every life there come times when the darkness of the blackest night surrounds one. Your position may not be due to your own efforts and for the moment you may seem to have been no more responsible than you are for a disturbance in nature, which may have consumed all of your possessions. The questions at such times will be, "What are you going to do? How will you face the issue?" and "Will you be as strong and resolute as you feel tonight?" To my mind the most important quality that you should endeavor to possess is to be free; freedom in

soul and spirit is what you should desire above all things to possess. The free man is unconquerable. The free man always has the courage to stand. The free man always has a reserve to meet every emergency. The free man always knows where he can secure supplies to tide him over until the crisis has passed. The free man is never downhearted and always has a kind thought and a helping hand for his fellows.

Most of you probably will feel that you are free indeed, and yet you may not know you are in the bonds of serfdom tonight, which will mean disaster to you later. There may be habits which weaken your vision. There may be opinions of others which are already beginning to sap the very energy of your life. There may be fears of one kind or another which are like cables of steel to hinder your progress. If you men are free, you are free to do what is right, free to counteract wrong actions by an about face toward the direction of right decision.

It may interest you to know that before writing anything on the subject of this address I sent a man to our library to find out what he could on "Human Welfare." I felt that I ought to know something of the underlying ethical principles and philosophical discussions bearing upon this conception. He reported that there were no discussions on the subject, so I feel myself exceedingly fortunate in not having anything to becloud the subject as I had it in mind. By human welfare I understand that which is in the interest of humanity. It includes any work in which a man puts something of himself apart from the consideration of the wage he is to receive. The mother in her relations to her children stands probably as the best expression of this ideal. The professional man has many opportunities to contribute to human welfare. The business man, when he is classed among the men of affairs,

becomes a philanthropist of the most potent type. At heart every man as he passes through life should do something for his fellows.

Now, the corner drug-store has been the nursery of great men. In fact, the science that sprang from the alchemy of old came out of the drug-store in the last century. No less a leader than General Leonard Wood spent his evenings, while at the Medical School at Harvard, in the drug-store of E. L. Patch. Dr. Simon Flexner, acknowledged as the foremost pathologist in America, received his early training in a drug-store in Louisville, Kentucky. J. N. Hurty, Secretary of the Indiana Board of Health and largely responsible for the progress of State Health measures in the United States, was the owner of a drug-store in Indianapolis. Simon Newcomb, one of the great mathematicians of America, told me on one occasion, with apparently some enjoyment, of the days when he was a drug-store apprentice and washed the bottles and windows as you and I have done. The number of men who have worked in drug-stores and have become famous in other pursuits is quite numerous. There was O. Henry, the novelist; T. C. Platt, the politician; C. S. McClung, the zoologist, and so on. I like to think of Sir Humphrey Davy not merely as a great chemist, but, when as an apothecary's apprentice he performed his first experiments with the crude instruments which he made from pots and pans of the kitchen. His ideals as expressed in his note-book at the age of 20 are eminently characteristic of many a clerk. He wrote: "I have neither riches nor power nor birth to recommend me; yet if I live I trust I shall not be of less service to mankind and my friends than if I had been born with all of these advantages." In nearly every community you will find the pharmacist plays a large part in its development. The chairman of Councils in the city of Detroit was

for years a retail druggist. Pharmacists have been elected to the office of mayor, have been sent to the legislature and even occupied the Governor's mansion. Pharmacists are large-hearted men, always public servants capable of meeting human needs in every form.

I did not mean to divert your mind into this channel as I was thinking of the drug-store in its relation to the public. It has been the temple for counsel, comfort and cheer, to untold numbers when they did not know what step to take next. The selfless work, which has been done in drug-stores, has never been inventoried nor has it been recorded by the cash register. No one, so far as I know, has ever tried to bring the incidents together, for it has seemed to us that to brag about the unpaid service on the part of the pharmacist was like extolling the bravery of an Indian. In fact, the public as well as the members of our profession have always felt that this was a part of our business to help, just as it is for an Indian to be courageous. I have an object, however, in referring to these matters as we approach some of the larger tasks which are ahead of us. I trust that I may not tire you if I give a few common illustrations of the pharmacist's service to the public for which he has felt content and indeed well-paid by the "thank you" of the recipient. I remember a few years ago, being in the drug-store of Henry C. Blair in Philadelphia, just as the shop workers were going home, a young woman came in, considerably distressed because of a cinder in her eye. Mr. Blair said, "I think I can help you," and in a few minutes removed the cinder, put in a drop of an eye lotion and when asked what the charge was, said, "Oh, that's all right." With a "thank you" the young woman left the place. Some years ago, when the late Joseph P. Remington had a drug-store, one of his neighbors was giving a reception in the

evening and after the guests assembled the gas lights went out. What was to be done? The most natural thing was to send for the druggist, and Joseph P. Remington with a tool kit went around remedying the trouble so that the party could go on. You may rest assured that he did not send a plumber's bill and was satisfied with the host's comment, "How good of you." In another instance, the proprietor of a drug-store in a small town took special delight in serving his community as an employment agent. Many was the man whom the druggist helped to a job. I well remember, in my days in the drug-store, how closely we were allied with the life of the people in our community, helping the stranger, assisting relatives in the reclamation of their wayward members, comforting those in trouble and ever directing the steps of those who crossed our threshold to a brighter life, or to those who could help them in their moments of doubt and fear.

But even all this is preliminary to the larger message which I would give you who are about to enter one of the noblest professions that can engage your attention. I think it is true that no man or woman takes up pharmacy without having some interest in his fellows and recognizing in this profession opportunities for unselfish service. I would that there was time to discuss with you, as I see it, the development of our profession in the United States.

Ever since the establishment of pharmacy, the achievements of pharmaceutical organizations have been little appreciated by the public, the medical profession or the men and women engaged in humanistic work. It is a daily record of individual service and as one goes over it all to present a summary, it is an inspiration, for it is filled with noteworthy achievements in which we may take pride. Our leaders have been interested in improving the quality of

drugs and medicines and in so regulating the practice that only the most competent should be entitled by law to engage in it.

1. Pharmacists have devised methods of assay and analysis for determining the quality of drugs and foods, and for detecting adulterants of the same, and as a result of their labors the quality of drugs and medicines have been improved until almost the highest possible efficiency has been attained.

2. Our members were among the first to advocate the enactment of laws for securing the inspection of foods, drugs, medicines and liquors, and the importance of their work in this direction is shown by the fact that, in the Pure Food and Drugs Acts of 1906, the United States Pharmacopoeia and the National Formulary compilations by the pharmacists of the United States were selected as the standards for strength, quality and purity.

Pharmacists have been most active in drafting and securing passage of laws against the evils resulting from the traffic in narcotic and other powerful drugs.

4. As early as 1821, pharmacists took up the subject of secret and quack medicines, and ever since have done what they could "To strip quackery of some of its mystery and borrowed plumes, and expose in naked deformity its shallow and wicked foundation." Pharmacists have always endeavored to eliminate quack practices and fraudulent medicines, and if you will read the Proceedings of the American Pharmaceutical Association, you will see that the pharmacists had positive convictions and working ideals many years before the American Medical Association undertook the program of leadership. The pharmacist's work in the interest of human welfare has been very far reaching indeed. I was interested recently in finding that the success of the prohibition movement in the United States is at least in part

due to the public spirit of one of America's most influential pharmacists, Dr. J. H. Beal, who as a member of the Ohio Legislature in 1902, drafted a local option law which was more comprehensive in its terms, more thoroughly worked out, and that withstood every opposition. This was the basis of all the legislative success of the Anti-Saloon League.

The record of pharmacy in America shows that pharmacists have always stood ready to co-operate with the Government officials, the medical profession and all organizations which are interested in the well-being and health of the people.

From what has been said you must be impressed with the high ideals and lofty purpose that controlled the members of our profession. If there has been any deviation from high ideals, these are the exceptions. I would have you feel that even the expressions of our leaders are but interpretations of the pulsating life and practices of the rank and file of the members of our profession. America is a new America. One of the greatest deterrents in the past to our progress has been our slow educational development. At last we have awakened and there are signs that we shall move very rapidly in pharmacy. I probably cannot speak with authority on the progress in medicine, yet I am inclined to doubt that the progress universally has been very great and that it is only in certain phases of human illness, mainly dealing with the bacterial diseases, that our progress has been most marked. In the general prescribing of medicine, making of a galenical preparation, the use of drugs generally, I am not sure that there is greater exactness, except in few instances, compared to a century ago. Of the many thousand substances used throughout the world, it will be many years before we know what are the most useful. And by the time such a classification has been reached, relatively small quantities of medicaments will be used. The next few years will be

marked by an extensive and intensive study of drugs, and there will be a new order of medicinal preparations. This change will require originality and initiative and I have no doubt but that the workers will be quite numerous. I am confident that the men will come upon the field having new visions and the old type of brilliancy and persistency that characterized Sir Humphrey Davy, Serturmer, Tanret and Prescott. The large problem, which we have before us, is in the interest of human welfare and briefly stated it is that medication shall be free from any concomitant habitproducing results. In other words, we must produce anaesthetics and hypnotics which do not lend themselves to drug addiction. And, secondly, alcohol, in the finished preparation taken by the patient, must be reduced to the minimum or eliminated entirely.

The war was fought in the interests of democracy and we must have sung the "Battle Hymn of the Republic" often enough so that those words, "Let us live to make men free" are ineffaceable in our hearts. If the newspaper reports are correct, that there are between 100,000 and 200,000 drug addicts in New York City, and that probably two or three per cent. of the population of the United States are enslaved through the abuse of drugs, it is our duty as pharmacists to do what we can to break these chains if it is in our power to do so. This is a time for co-operation between the medical and pharmaceutical professions. I have no doubt that much can be done through education and legislation among the medical profession. But what I have in mind will require the closest co-operation with a much larger organization, namely: All those that are interested in the well-being of the human race. What is needed is research, which will get us away from the use of opium and coca and the alkaloids contained in them, and enable us to produce a new class of synthetic chemicals which can be used for the alleviation of pain and

which are free from such attendant evils. In this country, during the past few years, there has been considerable attention given to the production of new classes of hypnotics and anæsthetics. I have no doubt that if we will concentrate our researches on this class of substances with this end in view, namely, that the ideal anæsthetic is one in which the possibility of drug addiction is reduced to a minimum and a coefficient standard must be established on this basis, it will not be many years before we will have quite a number of substances which can be used in surgery, and for temporary relief in extreme cases of pain, which will free our people from the enslaving use of drugs.

During the war we were put on our resources, and if we could, under the stress and strain of that time, invent new anæsthetics, such as apothesine and discover that such a well-known chemical as benzyl alcohol could be used as a local anæsthetic, it is quite likely that now, under normal conditions, our activities can be increased and that we shall find a number of substances that can be used in the same manner as the old established principles whose use have been abused. To me a very interesting observation is the fact that in chelidonium and gelsemium, two rather common plants, the one occurring in the northern United States and the other in the southern States, there occur principles which have hypnotic effects very much like the principles in opium. But what is of the greatest interest is that these newer principles manufactured in this country are not likely to produce the same results in the establishment of drug habits, as the substances enumerated in the Harrison Anti-Narcotic Act. Recognizing qualitative reactions, we can evolve quantitative standards. We are rapidly finding out that certain nuclei of organic compounds exhibit specific physiological reactions and that to these nuclei we can attach certain radicals, which modify these responses. Our plan of attack in the future will

be to examine each substance as to its reactions and possible modifications on two fundamental qualities giving a mathematical value to each. In the vertical column will be given its habit-producing effect on the human organism. In the horizontal column will be rated its therapeutic value as a hypnotic or anæsthetic. We will then plot its actual position and experiment until we gradually eliminate all those substances that show a marked rise from the horizontal line. Without discussing this subject in detail, with the limited time at my disposal, I leave it with you as a goal towards which we can strive and towards the attaining of which we, as pharmacists, will bend our best efforts.

We now come to the subject of the use of alcohol in medicines, and I regret very much that I am compelled to leave out my discussion as to its value and necessity as an extractive, solvent and preservative in present day practice. Neither can I discuss the difference between the use of alcohol in medicine and for beverage purposes, and we are well cognizant of the trouble that this is likely to give us in the future. Fortunately the position of pharmacists throughout the United States is in the interest of human welfare. They have not allied themselves with the liquor interest, and unequivocally have come out denouncing the use of liquors as medicine, and I know whereof I speak when I say that the leading and thoughtful man in pharmacy would prefer that they have nothing to do with the dispensing of alcohol or any preparation containing alcohol that can be used for beverage purposes. I am also very sure that the Anti-Saloon League can count on the co-operation of druggists throughout the United States in the shaping of legislation, which will help to control and check the illegitimate use of alcohol for beverage purposes.

I wish that the public generally would recognize the serious-minded attitude of the pharmacist in every measure that relates to the use or possible abuse of

medicines and the substances entering therefrom. The paper by Mr. C. M. Woodruff at the recent meeting of the American Drug Manufacturers' Association is a high-minded, public-spirited discussion of the future of alcoholic medicinals and should be widely circulated not only in the professions using medicines but among the public.

Now, looking ahead to the future, I think that we should endeavor to promote research, which would enable us to modernize the preparation of medicines so that they shall contain a minimum amount of alcohol, and require that the alcohol be eliminated before final use of the prescription by the patient. If medicine is an exact science, and the use of medicines on human beings is based upon previous experimentation upon lower animals, then it would follow that all interfering substances should be removed from the product as administered to the patient. When, for instance, tincture of digitalis is tested physiologically upon frogs, the alcohol is first evaporated, then the alcohol-free tincture is administered. Of course, with such a small animal as a frog, the relatively large quantity of alcohol is an interfering substance and while it may not be so serious taking into consideration the weight of the adult to whom is administered from 10 to 30 mm. of the tincture, yet the same general reasoning ought to prevail. I mean this, that all interfering substances, whether alcohol or any other solvent entering into the preparation, should be eliminated before the administration of the medicine to the patient. This may bring us finally to the use of active principles, and the time may come when medicinal agents shall represent either tablets of active constituents, or ampoules or preparations in which the alcohol content is much lower than at present.

You are familiar with the magazine articles dealing with the use of narcotic drugs and the effect of prohibition tending to increase this evil. While we can hardly believe that the use of habit-

producing drugs progressed on such a large scale as the figures indicate, I am of the opinion that it is an evil which is fraught with more dire consequences than merely the subjection of the patient to this habit. One of the essential qualifications for success is that one should be able to stand punishment and pain in a manly way. It requires a great deal of skill on the part of the physician to determine just how much pain and suffering an individual can stand. Certainly no amount of temporary relief can atone for the act of any physician, who, without the responsibility, does not recognize that with every dose of hypnotic or anaesthetic, which is administered, he is likely to weaken the resistance of the patient to both, pain on the one hand and adversity on the other. The man or woman, who cannot stand a good deal of natural pain when in ill health, is unable to meet adversity with the moral courage required. It would be a great deal better to develop these qualities, which indicate courage and heroism when we are confronted with the ordinary ills of life, than to permit the patient to yield to fear which eventually may bring the enslavement of all of the faculties. The physician has a great responsibility. According to the Harrison Narcotic Act, the extent of the use of habit-drugs depends entirely upon the physician. We, who are, however, entered in pharmacy, nevertheless have opportunities for helping the reduction of the narcotic evil. It seems to me that we may well approach this problem in a very large way and help to solve it. It will take time—possibly five, ten or twenty-five years. It will require painstaking research and experimentation on a more extensive and productive scale than has ever been attempted. To some it may seem too large an undertaking. To all of us, however, it will seem worth while. Let us think about it until we develop the machinery to start the job. Let the leaders be men with interpretative powers.

Dream lofty dreams, and as you

dream so shall you become. Your vision is the promise of what you shall one day be; your ideal is the prophecy of what you shall at last unveil.

The greatest achievement was at first and for a time a dream. The oak sleeps in the acorn; the bird waits in the egg; and in the highest vision of the soul a waking angel stirs.

My theme then tonight resolves itself in the thought that the great essential for human welfare is the spirit of freedom, and that the pharmacists' contribution will lie in doing what they can to supply a better class of medicaments to replace the debasing drugs and enslaving medicines, which now are considered so essential.

If you can venerate traditions but retain your freedom of thought; if you remember your experiences and apply them to new experiments; if you can profit by the wisdom of the sages and be ready for new revelations; then you are prepared with all this accumulation of knowledge to act as a pioneer seeking new paths, ready for new ventures, strong and brave of heart. The world needs men who are free to break down prejudices, overcome ignorance and help men to find eternal life. Lay hold of laws which are demonstrated with mathematical precision. Remember most of the concepts of man are merely theories. Beware of being committed to them for they shall probably give way to other theories, and supplemented by other concepts, only finally the whole truth is known.

As a motto on this Commencement night, you may take with you these thoughts for your guide:

I have tolerated no evil;
Sophisticated no truth;
Nursed no delusion;
Allowed no fear;
And helped to make men free.

INTERNAL REVENUE AND MISCELLANEOUS LEGAL NOTES AND RULINGS.

The Collector of Internal Revenue of St. Louis holds that in filling a physician's prescriptions calling for a proprietary remedy the pharmacist must apply the Internal Revenue stamp to the container in the same fashion as if he were selling in the original package. Cocaine and morphine, supplied through druggists holding wholesale licenses, must be supplied in original stamp packages.

If a druggist sells paregoric to an addict, he renders himself liable to the law. Even if the paregoric is prescribed by a physician for an addict, both, physician and druggist, may be held liable under the law, provided it be shown that the physician was not actually treating the patient in good faith to effect the cure. If a druggist sells a dose of Bromo Seltzer to a patient at the soda fountain, or otherwise, he must affix the proper stamps to the bottle. The druggist in that instance is held to be the consumer.

Woodberry's, Resinol, Cuticura, Poslem, and other similar soaps do not require proprietary stamps when sold at retail. All the toilet soaps pay a manufacturer's tax. Tooth brushes, nail files, etc., are not taxable. Any common medicinal agent recommended on the label as a remedy is taxable; for example witchhazel solution. Absolute alcohol for technical purposes may be bought by making out triplicate forms. When properly filled, liquor prescriptions may be delivered by messenger in dry territory. Liquor prescriptions may be sent by express and possibly (?) by mail. Only the druggist designated on the prescription may legally fill a liquor prescription.

Pabst Malt cannot be sold except on a prescription. Malt Nutrine may be sold by the druggist. Brown Mixture may still be sold over the counter.

The State Labor Commissioner holds

that a druggist may be employed only ten hours a day, but this interpretation probably will not stand, as it is the intent of the law that a clerk shall not work more than sixty hours per week. To place any other interpretation would be causing a great deal of inconvenience and hardship.

The drug stores of the Bay cities are being inspected to see if they are complying with the City Ordinance in regard to storing of gasoline. Most ordinances forbid keeping more than five gallons, and some require special containers. Prescriptions for narcotics for legitimate use in chronic painful diseases do not fall within the rules covering sale of morphine for drug addicts. Narcotic licenses, if not renewed before July 31st, are subject to a 25% penalty.

We are indebted to W. Bruce Phillip, Secretary of the Alameda County Pharmaceutical Association, for most of these hints on rules and regulations, and Mr. Phillip furnishes a weekly letter to members of the Society, giving timely hints on rules and regulations affecting Pharmacy.

ANNUAL MEETING OF THE NATIONAL PHARMACEUTICAL SERVICE ASSOCIATION.

The annual meeting of the National Pharmaceutical Service Association was held at 145 North Tenth Street, Philadelphia, on the evening of June 30th, 1919.

The minutes of the Executive Committee meetings were read and on motion, approved.

The Secretary presented his annual report, briefly reviewing the activities of the Association. Attention was called to the many hundreds of petitions sent to the Committee on Military Affairs of the House of Representatives from all parts of the United States in the interest of the Edmonds' Bill, together with many personal telegrams and letters from prominent pharmacists, physicians, parents of men in the military service, and many

public men. Considerable newspaper activity was also secured in various parts of the country.

Although the Edmonds' Bill did not pass in the last session of Congress, it has been re-introduced and arrangements are being made for a conference during the annual meeting of the American Pharmaceutical Association, so that all who are interested in securing such legislation may have an opportunity to express their views, and determine what modifications may be necessary. At this meeting, there will also be considered the Naval Bill introduced by Hon. George P. Darrow, for the establishment of permanent commissions in the Hospital Corps of the Navy, and it is hoped that Congressmen Edmonds and Darrow, and officials of the Navy can be present to advise with and give us the benefit of their experience.

The Treasurer presented his annual report, and in setting forth the finances of the Association since its establishment, stated that the printing expenses have totaled \$555.56, postage \$394.59, expense of presenting the cause of military pharmacists to other associations \$178.55, and the cost of a stenographer in the office \$807.50, with office furniture and typewriter rental, \$29.95, these totaled an expenditure of \$1966.15.

IMPORTANCE OF SERVICE ON BIOLOGICALS.

Service is a word that has been very much overworked in recent years, and not infrequently has been abused. The fact remains, however, that there is probably no other business in which the service is so important as in handling antitoxins, serums, vaccines and other biological products. Druggists who have realized this fact and acted accordingly have been rewarded by increased business, profits and prestige, as witness the present-day standing of those druggists who have intelligently featured biological products.

The word "service," when used in this connection, must be interpreted in its very broadest sense, as applying not only to actual delivery when the product is needed, but rather beginning at the very outset of production and continuing through the many steps of preparation, testing, filling, storage, transportation, etc., which the product must pass until it finally is used on the patient.

In their advertisement on another page, the H. K. Mulford Company emphasize the importance of biological service, and present a concrete outline of what Mulford service is, and what the druggist's service should be, and the fruitful results of combining these two services for the benefit of physicians and patients.

Every druggist will do well to consider carefully how he may further develop his business by improving his service along this line.

AMERICAN PHARMACEUTICAL ASSOCIATION.

The Sixty-seventh Annual Convention of the American Pharmaceutical Association will be held in New York City this year, beginning with the week of August 25th. The American Conference of Pharmaceutical Faculties and the National Association of Boards of Pharmacy will meet August 25th and 26th in joint session with the section on Education and Legislation of the A. Ph. A. The headquarters of these meetings will be at the Hotel Pennsylvania.

The American Pharmaceutical Association is the one pharmaceutical association of the United States wherein the predominant elements are for all those higher things in Pharmacy which are worth while. We urge all our readers, and those who have any interest, to take advantage of this occasion and meet the people who are the backbone of

reputable American Pharmacy. We also urge our readers to join this Association, as a membership is worth many times what it costs.

L. J. Westlake, proprietor of the Rexall Drug Store, Tracy, Calif., accompanied by his wife, has gone to Boston to attend the Rexall Convention August 12th. While in the East Mr. Westlake will take in the Knights Templar Convention at Philadelphia. After visiting other important points of interest in the East they will return to the Pacific Coast over the Canadian Pacific, arriving home in the latter part of September.

Mr. Westlake is some hustler in the business world, but believes in taking a worth-while vacation.

According to a note from the secretary of the Alameda County Pharmaceutical Association, the law forbidding the sale of Paregoric and Hypodermic Syringes is for the time being a dead letter, for the reason that a petition filed nullifies the law until after election.

LOS ANGELES AND SOUTHERN CALIFORNIA DRUGGISTS ACTIVE AGAINST BLIND PIGS.

The following resolutions speak for themselves:

WHEREAS, reports have come to the officers of the association that alcohol, essence of jamaica ginger, simple or aromatic elixir and other alcoholic preparations are now being sold indiscriminately by druggists who cannot help knowing that the use that is being made of them is for beverage purposes in open violation of our local and national laws, be it

RESOLVED, that this association now gives warning to those who are selling the above mentioned preparations in such manner as to technically comply with the law yet knowing that they as vendors are violating the spirit of the law yet do so for the

THESE ARE SUPERIOR PRODUCTS

Arsaminol

(ARSPHENAMINE)

AND

Neo-Arsaminol

(NEO-ARSPHENAMINE)

"606" Equivalent**"914" Equivalent**

Made in the U. S. A.

TAKAMINE LABORATORY, New York, N. Y.

Under Federal License and Government Inspection

License No. 2, 2a, 2b, 2c

Meets the Most Exacting Requirements**LOW TOXICITY**

Reduced to a minimum and lower than the Government Standard.

GREAT SOLUBILITY

Dissolves instantly in water at room temperature. No heating required.

HIGH THERAPEUTIC VALUE

Contains Government standard of Arsenic, which therapeutic value is enhanced by low toxicity.

These products are manufactured by Dr. Takamine (discoverer of Takadiastase and Adrenalin) and chemists lately associated with Dr. Hata, co-worker with Prof. Ehrlich, discoverer of "606" and "914."

PRICE LIST AND DISCOUNTS ON APPLICATION

Pacific Coast Distributors

PACIFIC WASSERMANN LABORATORIES

SAN FRANCISCO
Pacific Bldg.

LOS ANGELES
Hollingsworth Bldg.

OAKLAND
Physicians' Bldg.

SEATTLE
Green Bldg.

sake of financial gain, must discontinue such practice, and be it further

RESOLVED, that any person who is prosecuted for violating any provision whatever, of the law for the sale of alcoholic liquors will receive no assistance of any kind from this association.

We deplore the fact that a person connected with our association will lower himself to carry on his business in violation of our city and national laws. The reputation of our association must be maintained. We will do all in our power to help stamp out such places that they call drug stores for the sake of running them as blind pigs contrary to law.

MARKET LETTER.

By F. W. DESSEL.

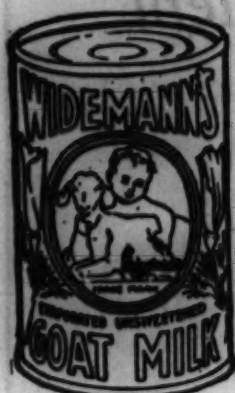
A general trend of the market, especially of pharmaceuticals, of late has been upward in most cases, although the Government is about to dispose of

a vast store of surplus goods. Yet this will be done in such a fashion as to disturb the market little if any. There is at the present time considerable export demand which will easily absorb the heavy stocks on hand.

This season perhaps more than others has been generally good so far as retail business is concerned. Since the closing of saloons people seem to have more money to spend upon the little sundries and household necessities. If the present business continues, the druggist will have little to worry about in the passing of the liquor business.

The crude drugs are still quite high, although not anywhere near the war prices in most instances. Drugs, however, which are produced in foreign countries are still very high. Gum opium and narcotics generally remain strong despite the fact that considerable opium from Bulgaria has recently been reaching this country. Quicksilver has been steadily increasing in price, and as

Recommend

GOAT MILK11 oz. can
Retails 25c

For Malnutrition of Infants and for Invalids. Invaluable in Tubercular cases. Do this and your customers will become your friends.

We can assist in building up a good business.

Send for our Sales Helps

**Widemann Goat Milk
Laboratories**

Physicians Bldg. San Francisco

a consequence all mercurials have advanced in moderate degree. The quicksilver is now selling around from \$105 to \$110 a flask. Benzoic acid and its compounds is very firm and somewhat higher. This drug is still used in considerable quantity in putting up fruit and vegetables for private use; hence the firmness of values. Phenol has shown considerable increase and this in turn has caused a sharp advance in the price of all salicylates; from 5 to 10 cents a pound has been added to the price of these pharmaceuticals. Menthol, too, is very firm, mostly selling around from \$7 to \$8 a pound. It is said that the crop in Japan in this drug was very poor. Bismuth and its salts have declined approximately 20 cents a pound. Ergot is very scarce and high priced, the better qualities now selling at \$4 a pound. Insecticide powder has sharply increased in price. Rio ipecac root is also very high. Quinine remains quiet, the drug selling around 90 cents per pound. Belladonna is weaker and is quoted at 60 and 65 cents per pound,

and much of it is selling at even 30 cents per pound. Cascara sagrada is firm, selling from 13 to 19 cents per pound. Essential oils are all very firm. Those which enter into perfumes are especially high priced.

Advanced: Acid carbolic crude, acid lactic, acid salicylic, bismuth citrate, camphor, copper acetate, oil linseed, spermaceti.

Declined: Acetphenetidin, antipyrin, arnica flowers, calcium hypophosphite, chamomile Roman, ether nitrous, saccharin.

RESEARCH AID.

The American Pharmaceutical Association has the sum of \$240 available for 1919-1920 for research work. Investigators desiring financial aid may communicate with Prof. H. V. Arny, Chairman A. Ph. A. Research Committee, 115 W. 68th St., New York. Candidates should give full past record and scholastic training.

DRUG STORE in suburbs of East Oakland—located at a prominent corner—also location U. S. Branch Postoffice and Oakland Public Library Branch; established over nine years; building under lease at \$27.14 per month; average sales \$30 per day; stock inventories \$4450. Price \$3000, cash, or part cash; balance adequately secured. Write G. B. F., at 665 Chetwood St., Oakland.

DRUG STORE for sale, on account of death of owner, at Sunnyvale, Santa Clara Valley. Store doing a good business on very light expense. Stock invoiced at \$5200; will sell for \$5000. Sunnyvale is an ideal home town, also a manufacturing and fruit packing center. This is a grand chance for a druggist of procuring a good business and pleasant home. For particulars apply to F. A. Weck, 501 Third Ave., San Francisco.

DRUG STORE for sale at Stockton, Calif. A popular and well established business, having a large trade is offered for sale; price \$13,000 or inventory. This is an opportunity seldom found. For particulars apply to F. A. Weck, 501 Third Ave., San Francisco.

Parke, Davis & Company contributed 670 men to the great war. Of this number twenty-two paid the extreme sacrifice.

PERSONAL AND DRUG TRADE NEWS
*****By Our Special Correspondents
*******THE N. A. R. D. CONVENTION.**

The National Association Retail Druggists will hold the annual meeting this year at Rochester, New York, September 8 to 12 inclusive. From all indications there will be a large attendance and a most profitable session to all who attend.

Ray Armstrong, of the Thomas Drug Store, San Jose, recently spent a pleasant vacation at Santa Cruz.

F. L. Youngman, Hyland Park Pharmacy, Sacramento, was a recent visitor at Santa Cruz. He was accompanied by his family.

T. B. Sawyer has purchased the store of Harry B. Leslie, Taft, California.

Horace Austin, manager of the J. B. Scott Store, Salinas, spent a very pleasant vacation at Carmel.

R. Rogers, of Webb & Rogers, San Rafael, spent part of his vacation at Santa Cruz.

H. O. Buker, of Fresno, spent his vacation at Bartlett Springs. Mr. Buker is a member of the State Board of Pharmacy.

James Patterson, formerly with the Kahn Agguire Company, San Francisco, but recently from the Medical Service overseas, is with the Miller Drug Company, Burlingame.

Walter Norbett will shortly open up a fine store, known as the Royal Pharmacy, in Richmond.

Tony Prior, of Prior's Pharmacy, San Francisco, recently enjoyed a trip through Lake County.

The Italian-American Optical Company has opened an office in connection with the Benefienza Pharmacy.

H. H. Boyson, proprietor of Boyson's Pharmacy, Valencia Street, San Francisco, is enjoying a vacation at his residence at Summer Home Park, on the Russian River.

G. H. Frates, U. C. '12, manager of Boericke & Runyon's Laboratory, has recently had a pleasant business journey through the eastern States. He made a special effort to visit the pharmaceutical manufacturing plants in Detroit, Philadelphia, and New York.

George A. Leber, son of A. L. Leber, the well-known Oakland druggist, recently arrived home from overseas service. Mr. Leber took advantage of University work while in France, taking a special course in chemistry and French literature.

Val. Schmidt, the venerable pioneer Polk street druggist, recently celebrated his 79th birthday, hale and hearty physically and mentally. A birthday dinner was served to sixteen friends and close relatives. Mr. Val. Schmidt is still able to enjoy life and even takes a keen interest in Pharmacy. THE PACIFIC PHARMACIST hopes Mr. Val Schmidt may enjoy many more such happy birthdays.

The American Association of Pharmaceutical Chemists held the twelfth annual meeting at Atlantic City, June 2-5. Among other resolutions the Association went on record as opposing the use of heroin and urges that Federal and State legislation be enacted to prohibit its use.

Capitalize yourself and your future.
Buy W. S. S.

COLLEGE NEWS.

R. I. Merry, U. C. '19, employed at the Owl Drug Store, recently spent two weeks at the Russian River.

M. L. Lloyd, proprietor of the Home Drug Company, Hyde and Jackson streets, accompanied by his wife and daughter, has returned from a two weeks' vacation in Sonoma County.

Ben Marsh, formerly with the San Francisco Drug Company, San Francisco, has accepted a position with the Public Drug Company at Stockton.

F. J. Ganz, recently opened up a new store at 3124 Sixteenth street, which is called the Unida Drug Store.

Francis J. Marshall, who was attached to Base Hospital No. 30, recently accepted a position with the Arcade Pharmacy at Bush and Paul streets, San Francisco.

William H. Matthews, formerly at Bowerman's, has taken a position with Tamm's Pharmacy.

George Ashland, manager of Shumate's at 57 Market street, spent his two week's vacation at Los Angeles.

Henry Rinn was united in marriage to Miss Ellen Bauer at Lodi on July 25. Mr. Rinn has just been mustered out of the service, having been in the Navy for nineteen months serving as a pharmacist's mate. He will resume his position with the Zimmerman Pharmacy at Lodi.

Emory Wyckoff, U. C. '17, has returned from the medical service and is located on a ranch near Napa, Cal.

H. W. Swanson, U. C. '14, accompanied by his wife, recently spent a month in the mountains. Mr. Swanson is with Boll and Kilpatrick at Vallejo.

Clifford A. Parker, U. C. '18, is out of the Radio service and is now employed at Long Beach, Cal.

G. W. Tippet, U. C. '15, has returned to his former position at the Central Drug Company of Sacramento, after spending several months at an evacuation hospital in France.

Robert Wise, Junior, U. C. '16, of East Auburn, Cal., is employed at the Owl Drug Store, San Francisco. Mr. Wise spent several months in the Medical Department, and was stationed at Goat Island.

Stinson La Motte, U. C. '17, of Arbuckle, recently assisted his father in moving their stock of drugs to a much better location. Many improvements were made and a greater display room is given.

John Reseigh, U. C. '13, has just returned from France, where he was in the medical service.

B. Huskinson, U. C. '16, of Roseville, Cal., accompanied by his wife recently made a two weeks' visit at Quincy.

FOR SALE—Live wire Rexall Drug Store. In a class by itself as a money maker. Will stand the most grilling investigation. Sales last year over \$21,000. Can be greatly increased with proper attention. Requires about \$10,000 cash to handle. Owners have other business. If interested write box 86 Portola, Cal.

Mr. G. G. Gaffney, U. C. '15, is doing relief work at the Owl Drug store of Stockton for a few months.

James Paterson will not return to his position as assistant in chemistry at the California College of Pharmacy, but after spending a short while in Santa Cruz with his folks expects to locate in Los Angeles.

O. J. Bailey plans on completing his college work, entering school with the 1920 class. Mr. Bailey was pharmacist's mate, second class, and was stationed at the United States Naval Training Air Station, San Diego.

David Grove, U. C. '12, is employed in one of the Shumate stores after being mustered out of the service. He was in the Artillery Corps.

Dr. V. C. Quartararo, U. C. '15, has recently opened up an optical department to run in connection with the Beneficene Pharmacy at 1400 Stockton street.

M. L. Douglas, U. C. '18, has accepted a position with Farley's Pharmacy, Berkeley. Mr. Douglas had charge of training carrier pigeons and was mustered out at San Diego.

George Fortier, U. C. '19, formerly employed at Wakelee's, Paul and Ellis streets, has gone to Winters where he will accept a position in one of the pharmacies.

Fred Spiekerman, U. C. '18, of Lodi, recently spent a few days in San Francisco on business.

J. B. Soleim, ex-U. C. '19, employed at the La Moine Drug Store at Richmond spent his vacation in northern Oregon.

E. H. Roeber, for many years employed by W. C. Powell, has returned to Redding and will assume charge of the Powell Drug Store.

Ransom Ring, graduate of the California College of Pharmacy, and son of J. H. Ring, Ferndale, has returned from Army Service overseas.

J. J. Jennings has moved into a new store at San Bruno.

Mrs. Fabre Rajotte, U. C. '13, formerly with the St. Francis Hospital, San Francisco, is doing relief work at the Darrough Drug Store, Red Bluff.

R. A. Leet, of Oakland, is spending his vacation at Crater Lake, Oregon. He is accompanied by Mrs. Leet and their two sons.

Clyde Stuart, of the Potrero Pharmacy, San Francisco, is enjoying a pleasant vacation at the Yosemite Valley.

Charles J. Abrahams, of the Abrahams Pharmacy, San Francisco, spent his vacation in Lake County.

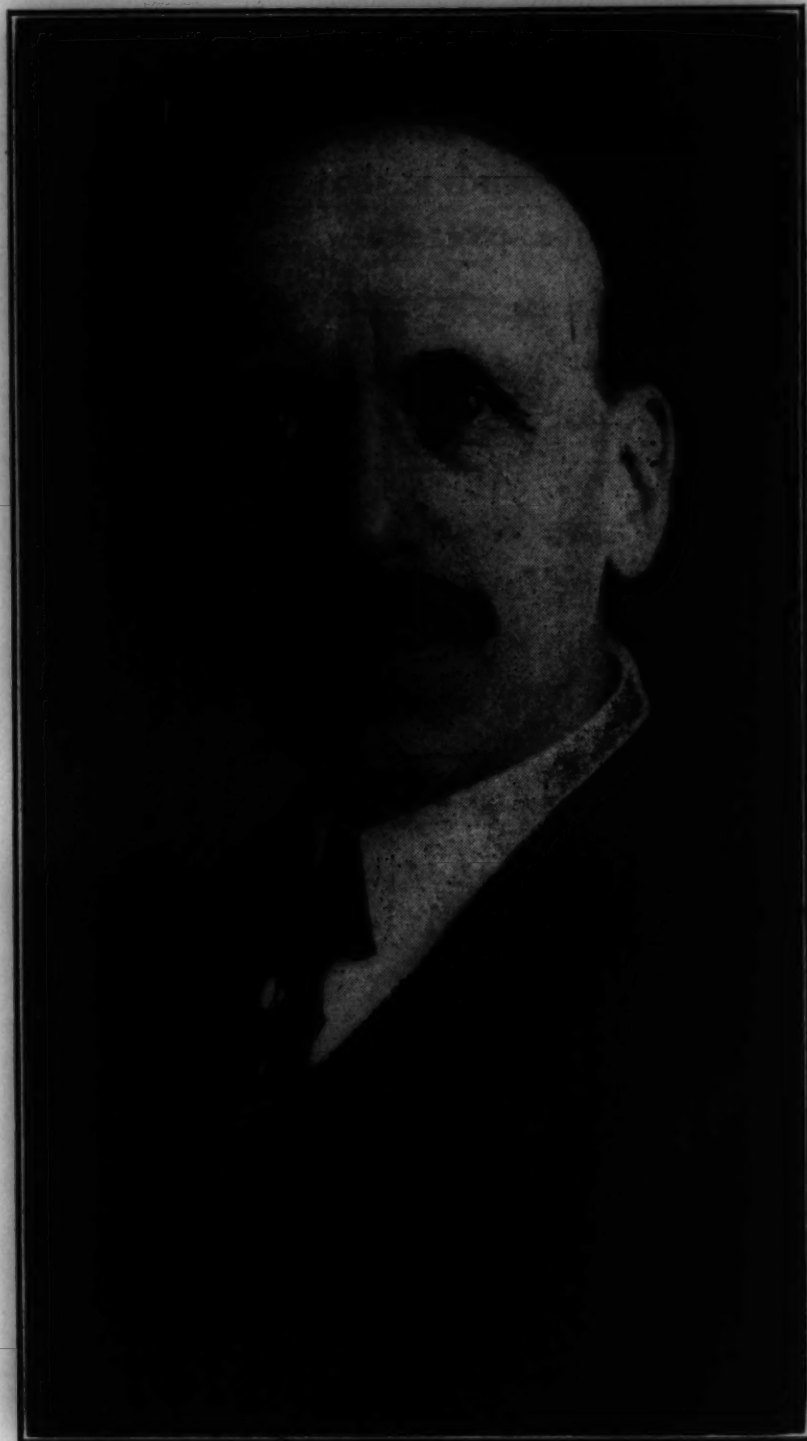
Henry Haman, of Wulzen's, Inc., San Francisco, enjoyed his vacation touring Lake County.

L. Harris, proprietor of the Sunset Drug Company, Haight Street, San Francisco, spent his vacation at Byron Hot Springs. He was accompanied by Mrs. Harris.

Louis Di Nola recently returned from overseas. He will resume his study of dentistry.

R. C. Knowlton, ex-U. C. '18, has taken up employment again with the Owl Drug Company, after being in the service.

B. J. McDonough, U. C. '13, joined the U. S. Army in October, 1917, and has until recently been in the service. He is glad to be back at the work of Pharmacy and is nicely located in Globe, Arizona.



PROF. HENRY KRAEMER

**PROFESSOR HENRY KRAEMER
ELECTED DEAN OF THE DE-
PARTMENT OF PHARMACY
OF UNIVERSITY OF
MICHIGAN.**

THE PACIFIC PHARMACIST takes pleasure in noting that Prof. Henry Kraemer, for many years connected with the Philadelphia College of Pharmacy as Professor of Botany and Pharmacognosy, and recently holding the same position at Michigan, has been made Dean of the Department of Pharmacy of the University of Michigan.

Prof. Henry Kraemer is too well known as a student and writer of first rank in the pharmaceutical world to require any extended introduction. His work in Botany and Pharmacognosy has won for him an enviable reputation. It is, indeed, fitting that both his work and worth has been recognized. That Prof. Kraemer will make good in his new position is a certainty. The University of Michigan is indeed fortunate to be

able to command his services, and we have every good hope that he not only will do much to elevate the standards of Pharmacy in Michigan, but will contribute mightily to its uplift throughout the country.

It is the ardent wish of THE PACIFIC PHARMACIST that Prof. Kraemer may live long enough to see Pharmacy of the United States recognized as a respectable profession.

Prof. A. B. Stevens, for many years dean of the College of Pharmacy of the University of Michigan, has retired from active service and will take his home in California. He was succeeded by Dr. Henry Kraemer, whose picture appears elsewhere in this issue of THE PACIFIC PHARMACIST.

Prof. Stevens was one of the beloved members of the Faculty for thirty-three years.

Dr. Edsel A. Rudderman has been elected dean of the Vanderbilt University, School of Pharmacy.

LANGLEY & MICHAELS FOUNTAIN SALES.

The Langley & Michaels Company report a demand upon them for Walrus fountains which they are having exceeding difficulty in caring for in face of the difficulties which all factories of this character are experiencing this year.

Among the fountains sold this Spring, most of which have now been installed, are the following: Livingston Drug Company, Livingston; Guy E. Hansard, Merced; Maui Drug Company, Hilo; Lemon Cove Mercantile Company, Lemon Cove; Lawrence Austin, San Luis Obispo; W. S. Coleman, Albany; Kirk Drug Company, Sunnyvale; M. Sorenson, Lompoc; David Dapelo, Raymond; J. B. Cambers, Klamath Falls; Stockton Mineral Baths, Stockton; Oswald Wilford, Gonzales; Pacific Drug Company, Honolulu; Occidental Hotel, Santa Rosa; Blum's, Inc., San Francisco; J. G. Burton, Orange Cove.

P-W-R**CODEINE****QUININE SULPHATE****MORPHINE SULPHATE****BISMUTH SUBNITRATE****STRYCHNINE****ACID CITRIC****MERCURIALS****IODIDES****ACETANILIDE****ACETPHENETIDIN****Acid Acetylsalicylic****SALOL****A Full Line of Chemicals for the****Arts and Sciences Supplied at****Lowest Ruling Prices by****All Jobbers and Whole-****sale Druggists.****SPECIFY****"P-W-R Original Packages"****Powers-Weightman-Rosengarten Co.****WOULD FORBID IMPORTATION
OF SALVARSAN AND NEO-
SALVARSAN.**

The Chemical Foundation, Inc., through its Counsel, Emory, Varney, Blair and Hoguet, has begun a suit in the United States District Court of New York, against the Anglo-French Drug Company, a New York concern, to stop the importation of Arsphenamine and Neo-arsphenamine, on the ground that such importations constitute an infringement of patents held by the Chemical Foundation, Inc.

Judge Hand has issued an Order to bring the Anglo-French Drug Company into court. This Order reads as follows:

"On the bill of complaint herein and the affidavits of Samuel A. Tucker and Lucius E. Varney, duly verified on the 2nd day of July, 1919, LET THE DEFENDANT SHOW CAUSE at a general motion term of this court to be held in the Post Office Building in the Borough of Manhattan on Thursday, July 17, 1919, at 10:00 a. m. or as soon thereafter as counsel can be heard, why an order should not be entered enjoining the defendant, *pendente lite*, from selling "sup-salvs" and "ampsalvs" or otherwise infringing the arsphenamine and neo-arsphenamine patents here in suit and belonging to the Chemical Foundation, Incorporated."

This suit is the first to be begun by the Chemical Foundation, Inc., to protect its patent rights. The infringing arsphenamine was imported and offered for sale generally in New York by the Anglo-French Drug Company under the name of "ampsalvs" and "supsalvs" and was advertised to be, or to contain the genuine Erlich "606" and "914," otherwise known as Salvarsan and Neo-Salvarsan.

The Chemical Foundation, Inc., is the owner of more than forty-five hundred once German-owned dye, chemical and drug patents. These

patents were sold to the Foundation by the Alien Property Custodian under an Executive Order approved by the President. It is the purpose of the Foundation to protect in every way its rights under these patents. No expense or effort will be spared.

MISSOURI STATE BOARD QUESTIONS.

MATERIA MEDICA AND PHARMACOGNOSY.

1. (a) Define Materia Medica. (b) Therapeutics. (c) Pharmacodynamics. (d) Pharmacognosy. (e) Botany.
2. What is a drug?
3. What is a Chemical?
4. What is a Pharmaceutical preparation?
5. What is the meaning of: (a) Narcotic. (b) Diaphoretic. (c) Anthelmintic. (d) Vulnary. (e) Refrigerant. (f) Excitant. (g) Expectorant. (h) Depressant.
6. State the action of the following drugs, and give their doses: (a) Ergot. (b) Cod Liver Oil. (c) Opium. (d) Gentian. (e) Rhubarb.
7. What is the action of the following Chemicals; also state their doses: (a) Kali Bromidum. (b) Chloralum Hydratum. (c) Morphinae Hydrochloridum. (d) Magnesii sulphas. (e) Ferrum sulphuricum.
8. What is the meaning of the following pharmacopoeial expressions: Acacia. The dried gummy exudation of Acacia Senegal "Welldenow," Fam. Leguminosae.
9. What is Opium?
10. Give the source of Quinine and describe the drug from which it is derived.
11. Oleum Morrhuæ: Give source, varieties and properties; also action, uses and dose.
12. Cetaceum: What is it? Describe the drug and give its various uses in pharmacy.
13. Cera Flava: Give source, varieties and uses of same.
14. What drugs would you give

for the following: (a) Bloodroot. (b) Yellow Pucoon. (c) Foxglove. (d) Henbane. (e) Bark. (f) Sea Onion. (g) Golden Seal. (h) Turmeric. (i) Canada Snakeroot. (j) Jimson weed.

15. What is a physiological antidote? Name one for Belladonna.

16. What chemical salts are meant by the following synonyms: (a) Rochelle salt. (b) English salt. (c) Salts of Tartar. (d) Cream of Tartar. (e) Prussiate of Potash. (f) White Vitriol. (g) Glauber's salt. (h) Tartar Emetic. (i) Copperas. (j) Bluestone.

17. State what medical action the following drugs possess: (a) Senna. (b) Stramonium. (c) Canabis. (d) Colocynth. (e) Serpentaria. (f) Sanguinaria. (g) Ipecacuanha. (h) Cinnamomum. (i) Galla. (j) Cantharis.

18. Define botanically: (a) Root. (b) Bark. (c) Leaf. (d) Fruit.

19. Give the various parts of a flower.

20. What is a seed. Name various kinds.

PROBLEMS AND POSOLOGY.

1. Convert the following weights and measures of the metric system into equivalents of Apothecaries' weights and measures: (a) 0.045 Gm. (b) 0.70 Gm. (c) 0.5 Gm. (d) 33.0 Gm. (e) 454.0 Gm. (f) 0.08 c. c. (g) 1.5 mils. (h) 29.0 mils. (i) 500.0 mils.

2. Three hundred millimeters of a solution weigh 450 Gms. What is its specific gravity? (Show your calculation.)

3. A liquid shows on the Centigrade scale a temperature of 50°. How many degrees is this on the Fahrenheit scale? (Show your calculation.)

4. A physician prescribes a solution containing $\text{℥ii}\frac{1}{2}$ of Chlorate of potassium in f. ℥vi water. What per cent. by weight of the salt does it contain? (Show work.)

Thrift is wise spending, sane saving, and safe investment. Buy W. S. S.

FORMULAS THAT WORK.

White Library Paste.

Rice starch.....	1 oz.
Gelatin	3 dr.
Water	8 fl. oz.

Heat with constant stirring until the milky liquid becomes thick and glassy, when the paste is ready for use. Add oil of wintergreen or cloves as a preservative.

Smokers' Tooth Powder.

Salicylic acid.....	30 grains
Camphor	10 grains
Cuttlefish bone, in powder.....	120 grains
Hard soap, in powder.....	120 grains
Menthol	3 grains
Precipitated calcium carbonate	2 ounces
Thymol	10 grains
Oil of rose.....	4 minims

Mix according to art.

Poultry Powder.

Mustard seed.....	8 ozs.
Cornmeal	8 ozs.
Fenugreek	6 ozs.
Sodium sulphate.....	2 ozs.
Sodium chloride.....	1 oz.
Iron carbonate.....	1 oz.
Calcium phosphate.....	1 oz.
Capsicum	1 oz.
Gentian	1 oz.

All ingredients should be reduced to powder and mixed well.

Cobblers' Wax.

Swedish pitch.....	2 pounds
Resin	1 pound
Tallow	3 ounces

When melted, pour into a bucket of cold water, and when it can be handled take it out and pull it and fold over, and pull it again and again, until it acquires a nice brown color. If it gets too stiff before this happens, put it in some warm water and go on pulling. This is the secret of making good cobbler's wax. When plastic cut into small lumps.

Black Inks.

I.

Iron sulphate.....	1 oz.
Nutgalls	1½ oz.
Vegetable gum.....	½ oz.
Distilled water.....	1 pt.

Mix and digest until dissolved.

II.

Nigrosin	160 gr.
Distilled water.....	16 oz.

III.

Extract of logwood.....	15 parts
Sodium carbonate (crystallized)	4 parts
Potassium chromate.....	1 part
Water	1,000 parts

Dissolve the extract in 900 parts of the water, allowing to deposit; decant; heat to boiling; add the sodium carbonate and potassium chromate to the

remainder of the water and add to the logwood solution, drop by drop with constant stirring.—Meyer Druggist.

Ant Destroyer.

Rosin	1 ounce
Carbon disulphide.....	1 pint

Dissolve, pour into ant hills and ignite. Caution against fire, etc.

For Insect Bites.

Menthol	30 grains
Alcohol	1 ounce

Ammonia neutralizes the poison of insect bites, if applied at once. It may be colored and perfumed.

For Perspiring Hands.

Lotion acid carbolic (1 in 40).....	3v
Lip. formaldehyde.....	3ss
Acid acetic.....	3j
Ess. Parma violet.....	3j
Aq. dest.....	ad 3vj

To be well rubbed into the palms of the hands and between the fingers several times daily.

Absorbent Cream.

Oil of peach kernels.....	ounces 8
White wax.....	ounce 1
Spermaceti	ounce 1
Water	ounces 2-3
Borax	grams 5
Oil of rose.....	minims 25
Oil of patchouli.....	minim 1

Dissolve the wax in the oil, use gentle heat or preferably a water bath. When the wax is dissolved, add the water previously heated, and in which the borax has been dissolved slowly, constantly stirring with an egg-beater. When cold add the perfume oils.

Toothache Wool.

White wax.....	2 ounces
Carbolic acid, cryst.....	1 ounce
Chloral hydrate.....	2 ounces

Melt the wax by heat, add the other ingredients, stir till dissolved, then immerse cotton-wool in the liquid.

Styptic Pencil With Formaldehyde.

Alum	480 grams
Borax	28 grams
Zinc oxide.....	2.5 grams
Thymol	8 grams
Solution of formaldehyde.....	10 grams

Melt the alum, borax and thymol on a water bath, add with constant stirring the zinc oxide and solution of formaldehyde, remove from the bath and pour into suitable molds just before solidifying.

The California College of Pharmacy opens September 2nd. All indications point to a large class and a prosperous college year.

CLASSIFIED.

This Department is free to Druggists, Drug Clerks, Doctors, Dentists, Chemists, Veterinarians and Nurses. Make your wants known and we will do our best to see that you get results.

EXCHANGE—For a good paying Drug Store in a prosperous town, anywhere in California, country preferred, 50 by 140 ft. lot, in fine residential district of San Diego, or 160 acre ranch, uncultivated, with plenty of water, six miles west of Ramona. If interested, write to: W. F. Belcourt, Druggist, Angels Camp, Cal.

WANTED—To hear from owner of good drug store for sale. Send price and full particulars to D. F. Bush, Minneapolis, Minn.

SPECIAL ATTENTION—If you want to sell your drug store, or buy one in any State, or want any kind of position, or need any kind of an employee, or need a Doctor, Dentist or Veterinarian, write F. V. Kniest, R. P., Bee Bldg., Omaha, Nebr. Estab. 1904.

The F. A. Weck Drug Store Exchange, 501 Third avenue, San Francisco, submits the following:

DRUG STORE in thriving Oregon town, doing a good business. Owner about to retire on account of advanced age. Value of stock and fixtures, \$7,700, or inventory; would consider part cash and term payment for balance. F. A. Weck Drug Store Exchange.

DRUG STORE in Butte County, well established and doing good business, and very low expense. Full particulars to interested parties. F. A. Weck.

DRUG STORE in San Francisco in thickly residence district. Owner has outside business, reason for selling. Daily sales, \$22.50; rent, \$32.50. Price \$3750. F. A. Weck, 501 3rd Ave., San Francisco, Cal.

NEVADA COUNTY. Store doing large prescription business. Rexall and Eastman's agency. Good all the year business; summer and winter resorts. Price, \$5,500.

DRUG STORE for sale, San Jose, \$3000. Good location, clean stock, good business and small expenses.

SMALL DRUG STORE in San Jose doing fair business and improving. Owner in ill health and must retire. Stock and fixtures valued at \$1600.

DRUG STORE for sale, Sacramento, \$8000. Money-making business, well established and good location. Good opportunity for a live man with sufficient capital.

DRUG STORE for sale in Santa Cruz Co., \$2000. Old established drug store in one of the best towns in California. Good opportunity for active man. Owner wants to retire on account of old age.

LOCATION for a drug store in a thriving town, near San Francisco, located on the main street in a modern new brick building. Low rent and a lease can be obtained if desired. This is an exceptional opportunity for a live druggist wanting to open a new store or to move from some other location.

DRUG STORE, Eureka, Cal. In the center of the city; modern fixtures; doing good business; owner has other interests. Eureka is a fast-growing city of 2000 population; good business the whole year. Price, \$7,000.

DRUG STORE in Oregon town (county seat). Owner must sell on account of ill health. Will sacrifice stock, \$3500. This is an exceptional opportunity for an active man—only drug store in town, also fine residence at \$4000 optional, may consider clear real estate exchange.

DRUG STORE in San Jose, Cal. Clean stock, modern fixtures. Owner will sell at discount from inventory as other business requires his attention.

DRUG STORE in Sacramento County, good town; owner wants to retire on account of old age. Good opening for doctor-druggist. \$2500.

DRUG STORE for sale, San Francisco, \$4000. On prominent business corner, Richmond District; modern fixtures, clean stock, doing good business; owner wanting to leave State is the only reason for offering store for sale. This is an exceptionally good offer for any live druggist.

FOR SALE—Drug store at Larkspur, Marin County, for sale owing to death of owner, and widow must sell. Larkspur and vicinity has about five hundred population and good country trade. A popular summer resort. A splendid chance for a druggist or doctor druggist to build up a prosperous business. Modern fixtures and stock valued at \$2500; the store has been established about three years. Rent of store and six-room flat \$30 per month. The store will be sold at a sacrifice. If interested call on F. A. Weck, 501 3rd Ave., San Francisco, Cal. Make appointment to see the store. Any reasonable offer will be considered.

DRUG STORE WANTED—We have a client wanting to buy a good drug business in one of the bay towns. Business must be on a good paying basis, sufficient to satisfy the employment of a registered pharmacist and a boy. Good location, clean stock and modern fixtures. State particulars. Address, F. A. Weck, 501 3rd Ave., San Francisco, Cal.

FOR SALE—Drug store Solano county; sixty miles from San Francisco; doing good cash business and a large prescription file; A. D. S. and other agencies; new stock and fixtures; price, \$5000. For particulars address, F. A. Weck, 501 3rd Ave., San Francisco, Cal.

DRUG STORE, Angels Camp, one of the best equipped drug stores in the State. This drug store is offered at a bargain in part or as a whole. Stock or fixtures may be bought separately. Anyone contemplating opening a drug store would find it an advantage to investigate this offer. The fixtures are in sections and could be easily packed and shipped to any other location at very much less than new and cheap fixtures could be installed at. If interested, communicate with F. A. Weck, 501 3rd Ave., San Francisco, Cal.

DRUG STORE—One of the best in the city of Fresno is offered for sale on account of the draft. Stock and fixtures about \$9000, will make some discount on inventory of stock. Modern fixtures; clean stock; A. D. S. agency. For particulars apply, F. A. Weck, 501 3rd Ave., San Francisco, Cal.

FOR SALE—Drug store in Oakland residence district doing \$25 to \$30 per day. Owner expects to enter the Medical Department of the U. S. Army. Will sell at inventory, about \$2500; stock and fixtures new; established about one year. For particulars address, F. A. Weck, 501 3rd Ave., San Francisco, Cal.

DRUG STORE out of San Francisco. Invoice price about \$4000; daily sales, \$25 to \$30; good agencies and growing business. For particulars see F. A. Weck, 501 3rd Ave., San Francisco, Cal.

If interested in the above list of business opportunities, address F. A. Weck Drug Store Exchange, 501 Third avenue, San Francisco, Cal.

**THE
JAMES H. BARRY COMPANY**

Incorporated

THE STAR PRESS

**Printers and
Publishers**

Book Binding,

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ive print.....

The Pacific Pharmacist

1122-1124 Mission Street, San Francisco

Phone Park 6380

FOR SALE

Twelve acres of very rich orchard land, two miles from Hayward and five miles from Oakland, Cal.

Seven acres in Belladonna; \$1000 per acre, including Belladonna crop.

ALBERT SCHNEIDER,
1738 Walnut St., Berkeley, Cal.

Walters Surgical Co.

441 SUTTER STREET

Between Powell and Stockton Streets

**Surgical Instruments
Hospital Furniture**

**Elastic Hosiery
Abdominal Supporters
and Trusses**

Laboratory Supplies

OPPORTUNITY

Country Drug Store doing a nice clean business; sales, \$45.00 per day. Expenses under \$50 per month. Stock will invoice \$4500 to \$5000. Store has more than paid for itself in two years, and will stand strict investigation. This offer will be withdrawn in a short time, prompt action is necessary.

Apply

F. A. WECK,
Drug Store Exchange,
501 3rd Ave, San Francisco.

We have City and Country Drug Stores not yet listed. Information upon application.

DRUG STORE EXCHANGE,

F. A. Weck,
501 3rd Ave., San Francisco.

THE
WALRUS
White-Iceless
Soda Fountain
 IS THE PRACTICAL "WHITE" SODA FOUNTAIN



**The Walrus "Installed"
 Plumbing Equipment**

saves you dollars—time—trouble

All the valves—cocks—tees—pipes—trap and connections—both for inlet and outlet plumbing "to the floor line" are all furnished and installed on Walrus WHITE-ICELESS Soda Fountain Interiors. You will never fully appreciate this feature until you buy a Soda Fountain without it. Otherwise the plumber will have to measure, cut and fit, also send to the shop for more tools or help. Possibly it will be the first Soda Fountain he ever tried to "pipe." Will it be done as you would wish? Our answer is—We furnish these plumbing parts because it means satisfaction and economy to you. It is but one of many ways wherein we safeguard your interests. Competitive Fountains are conspicuous by the absence of this one great feature of "installed" plumbing.



REPRESENTATIVES IN ALL PRINCIPAL CITIES

Langley & Michaels Co.,
 42 First St.,
 San Francisco, Calif.

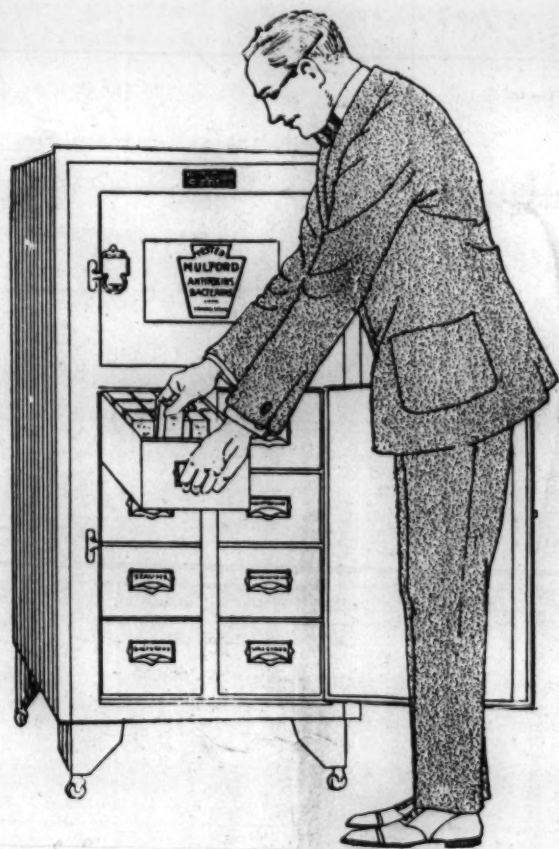
Ogden Wholesale Drug Co.,
 Ogden, Utah.

Borun Bros.,
 304 S. Los Angeles St.,
 Los Angeles, Calif.

Wood & Company, Inc.,
 1517 Commerce St.,
 Tacoma, Wash.

Service Stimulates Sales on Biological Products

Service is vital to successful biological business, and service is a very comprehensive term. This applies to you as a distributor, as well as to us as manufacturers.



Mulford Service Means—

The utmost in skill and care in preparing, testing, filling and retesting the various products.

Wide and quick distribution through branches and depots dotted over the country from coast to coast.

Prompt shipment at all hours, evenings, Sundays, and holidays included.

Carrying immense reserve stocks to meet epidemic demands.

Readiness and willingness to respond to all ordinary and extraordinary calls for the alleviation of the sick and suffering, as well as for the protection of the healthy.

Your Service Means—

Selecting and handling the best that is available in quality.

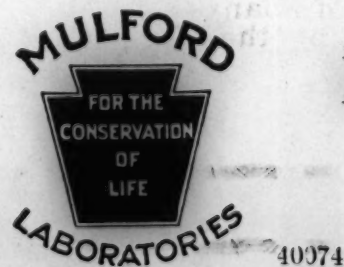
Giving proper care to keeping your stock in a refrigerator or other cool place.

Readiness and ability to furnish correct information.

Prompt deliveries on emergency calls at all hours.

Biologicals offer you a most profitable field for business. Cultivate that field. Sow the seeds of success by handling Mulford Products—that will insure satisfied customers. Fertilize by judicious use of Mulford literature and advertising, supplied to you free. Then nurture the crop by supplementing Mulford service and quality with your own local service.

Your harvest will be bigger, better, and more profitable business.



H. K. MULFORD COMPANY

Manufacturing and Biological Chemists

Philadelphia, U. S. A.

Here's a "Hummer"!



Germicidal Soap
Use it as a shampoo
Prevents dandruff by
removing the cause

OUR new Germicidal Soap window display is strikingly beautiful. It includes two large easel cards and four smaller cards of the same designs, printed in blue, black, yellow and red—colors that put snap and dash into the window.

It emphasizes two popular uses of Germicidal Soap—as a shampoo, and for the bath.

The specimen cards reproduced on this page give just a hint of the beauty and selling-punch of the complete display.

Placed in your show-window, with a quantity of Germicidal Soap, this display will command instant atten-

tion. It will draw customers into your store. It will put money into your cash-drawer.

The set of six cards—ready to be put up in your window—will be sent free with an order for six dozen or more of Germicidal Soap. Attractive counter advertising—folders that link up with the display—will be included in the shipment.

Give your order to our salesman. Get busy at once—before the hot weather is over.

Parke, Davis & Co.

DETROIT



Germicidal Soap
Use it in the bath
A perspiration deodorant
and general germicide